

The Mining Journal

AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 565.—VOL. XVI.]

LONDON: SATURDAY, JUNE 20, 1846.

[PRICE 6D.]

TO ENGINEERS, RAILWAY CONTRACTORS, AND OTHERS.

MR. R. K. DAVIS begs to announce, that he has received instructions from the company to **SUBMIT TO PUBLIC COMPETITION**, on Thursday, the 16th of July, at One o'clock, in Six Lots, at the Auction Mart, Bartholomew-lane, the whole of the **PLANT AND MATERIALS** of the

EXPERIMENTAL RAILWAY ON WIMBLEDON COMMON,

constructed to show the working of Prosser's Patent Guide Wheels: comprising—
A LOCOMOTIVE-ENGINE AND TENDER, in excellent working order, with 12-inch cylinders, 18-inch stroke, and adapted to the usual gauge of 4 ft. 8½ in.
A second-class CARRIAGE AND THREE LUGGAGE WAGGONS, all fitted with Prosser's Patent Guide Wheels; which, although constructed to run on a wooden rail, possess the singular advantage of working equally well on rails of any other description, with less friction than the common flange-wheel.
Also, about 1400 cubic feet of 6-inch BEECH QUARTERING; and 3300 9-foot FIR SLEEPERS, 12 ft. by 6 in., and 10 ft. by 5 in.—now forming 1½ mile of the experimental railway; about SIX TONS of IRON RAILS and CHAIRS; and the MATERIALS forming the sheds, offices, and cottages.
May be viewed (any day) between the hours of Eight and dusk, and particulars obtained at the usual inns in the neighbourhood; on the premises, Wimbledon; at the offices of the company, 35, New Broad-street; and of Mr. R. K. Davis, 68, Mark-lane.

SOUTH STAFFORDSHIRE.

VALUABLE MINERAL PROPERTY, CRADLEY, near STOURBRIDGE.—Messrs. OATES & PERRENS beg to announce to CAPITALISTS, and the PUBLIC generally, that they have received instructions to OFFER FOR SALE, a very valuable MINERAL PROPERTY, at Cradley, in the immediate neighbourhood of Stourbridge. It will be divided into lots of suitable size, and will be offered at the Talbot Hotel, Stourbridge, on Friday, the 24th of July, 1846, punctually at Five o'clock in the afternoon.
Printed particulars, with plans annexed, may be had on application to Messrs. Hayes and Son, solicitors, Halesowen; Mr. J. Matthews, Park Hall, Kidderminster; or of the auctioneers, Stourbridge.

THIRTY-INCH CYLINDER ENGINE, AND OTHER SPARE MINING MATERIALS, FOR SALE.—TO BE SOLD, BY AUCTION, on Tuesday, the 24th day of June inst., at Eleven o'clock in the forenoon, at PROVIDENCE MINES, near ST. IVES, Cornwall, an excellent 30-in. cylinder PUMPING-ENGINE, with boiler, about 7 tons; a WATER-PRESSURE ENGINE, 8-in. cylinder, with nozzles, on the most approved plan; a quantity of PUMPS, of various sizes, and other spare materials.
For viewing the same, application should be made to the agents on the mine; and other particulars, to Mr. G. H. Bellringer, auctioneer, Penzance.—Dated June 8, 1846.

STEAM-PACKET COAL COLLIERY.—SOUTH WALES.

TO BE SOLD, OR LET, for such a term of years as may be agreed, TWO SEAMS of COAL lying under an estate of about 200 acres, within five miles of the port of Swansea. This estate is contiguous to the Grangol or Bryndwr Collieries, and contains the same seams of coal which have been used for many years by the East India Company and the Government, and which are named in the list of the coals to be included in the Admiralty contracts, and at present by some water-works and large brewery establishments. The ground is well proved by extensive workings in adjoining collieries. The property is believed to be free from faults, and the workings may be opened in an efficient manner at a small outlay. The coal can be produced at a low cost, and the transit to the port will be by a locomotive railway, intended to be opened in a few months. The consumption of this description of coal has greatly increased of late—its application to steam navigation having become extensively established. Large quantities of this description of coal are now exported into foreign parts from the ports of Swansea and Neath.
A large HORSE WHIM for sale.—For further particulars apply to Mr. Benjamin Daniel, colliery engineer, 7, Garden-street, Swansea.

STEAM COAL.—THE BYNEA COLLIERY TO LET, with immediate possession. It is situated close to the lines of the Llanelly and South Wales Railways; on the former of which the coals are carried for shipment to the Llanelly Dock—a distance short of three miles from the colliery. The Spilly Copper works are contiguous, to which easy access might be had over the land of the proprietor of the colliery. If at any time these works should be again carried on, THE BYNEA COAL has been highly approved of for STEAM PURPOSES and PATENT FUEL, and is in good demand for smiths, and other uses, particularly in the Dublin market.
The PLANT, consisting of a 40 and 20-horse power ENGINES, &c., to be taken on terms to be agreed upon.
For particulars apply (letters pre-paid) to Mr. B. Jones, solicitor, Llanelly; or to Mr. R. Glascoine, at the office of the Llanelly Railway and Dock Company, No. 9, Old Jewry Chambers, London.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.
CAMERON'S COALBROOK STEAM COAL AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)
OFFICES—2, MOORGATE-STREET, LONDON.

The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.

PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.
The Peninsular and Oriental Steam Navigation Company BOOK PASSENGERS for CEYLON, MADRAS, and CALCUTTA direct, by steamers leaving Southampton on the 20th, and for Alexandria, en route to Bombay, on the 1st of every month.
A steamer from Southampton leaves the 1st and 30th of every month for Malta, whence are steamers to Naples, Genoa, Civetta Vecchia, three times a month.

STEAM TO CORUNNA, OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.
A steamer leaves Southampton on the 7th, 17th, and 27th of every month.
Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mark Lane, London, where only passages can be secured throughout.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.

Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their **IMPROVED ELASTIC METALLIC PISTONS.**

THE PRINCIPAL FEATURE AND ADVANTAGE OF THIS IMPROVEMENT is—

1. Its great ELASTICITY and SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.
2. Its extreme SIMPLICITY and LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.
3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER are confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.
Models may be seen at the Salford Iron-Works, Manchester; at W. Barker's, engineer, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

VENTON GIMPS MINING COMPANY.

1000 shares (on the cost-book system.)
PROVINCIAL COMMITTEE.
JAMES HAY, Esq.
A. L. MOCATT, Esq.
GEORGE MACKAY, Esq.
Forms of application for shares, and full particulars, to be obtained at the office, No. 4, Austinfriars; or of Mr. Richard Thomas, mining agent, 8, George-yard, Lombard-street, London, June 3, 1846. J. J. ISELIN, Hon. Sec.

THE PATENT SAFETY FUSE,

FOR ELASTIC ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDIENT MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that your recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."
Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Cornborne, Cornwall.

NOTICE TO THE PROPRIETORS AND SHARE-HOLDERS OF MINES, SMELTING-WORKS, &c.

Messrs. MITCHELL and FIELD beg to inform the PUBLIC, that they have REMOVED from No. 5 & 6 to No. 22, HAWLEY-ROAD, KENTISH TOWN, where they have erected a spacious LABORATORY, fitted expressly for the performance of all OPERATIONS CONNECTED WITH MINING.—Practical instruction to gentlemen in Assaying, Mineral Analysis, and Manufacturing Chemistry in general.
Assays and Analyses conducted as usual.
All communications to be addressed to Messrs. Mitchell and Field, assayers, No. 22, Hawley-road, Kentish Town.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.

Apply to Mr. CAPPER, ENGINE-MAKER and FOUNDER, BIRMINGHAM.
Price.....£14 per horse-power.

NATIONAL PROVINCIAL BANK OF ENGLAND.

112, Bishopsgate-street, June 16, 1846.—The directors of the National Provincial Bank of England hereby give Notice, that a DIVIDEND, at the rate of 5 per cent. per annum for the half-year ending the 30th June, 1846, will be PAYABLE on the company's stock, on and after the 16th July next, when the dividend warrants will be obtained at the company's office, 112, Bishopsgate-street, or at the different branches.
The transfer books will be closed on and after Monday next, the 22d inst., until the dividends become payable.
By order of the court of directors,
DAN. ROBERTSON, Manager.

EUROPEAN GAS COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the proprietors will be HELD on Thursday, the 2d day of July next, at the hour of Two o'clock precisely, at the office of the company, 39, Finsbury-circus, London, pursuant to the provisions of the Deed of Settlement. Two directors retire by rotation, but, being eligible, will be proposed for re-election.
London, June 15, 1846. By order of the board, J. B. GREAVES.

ST. KATHARINE DOCKS.—Notice is hereby given, that a HALF-YEARLY GENERAL MEETING of the proprietors of the St. Katharine Docks will be HELD in the Dock-house, Tower-hill, in the county of Middlesex, on Tuesday, the 14th day of July next, at Twelve o'clock at noon, for the purpose of declaring a dividend on the capital stock of the company for the half-year ending the 30th June inst.; also for the election, by ballot, of 21 directors for the year ensuing; and that the books of the company will be closed on Wednesday, the 24th inst., and opened again on Monday, the 27th of July next.
St. Katharine Docks, June 16, 1846. By order of the court, JOHN HALL, Secretary.

ASTURIAN MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the registered proprietors of shares in the Asturian Mining Company will be HELD on Monday, the 29th day of June inst., at the company's office, 9, Austinfriars, for the purpose of receiving the directors' report, and transacting other business.—The chair will be taken at One o'clock precisely.
By order of the board, K. MACKENZIE, Secretary.

No. 9, Austinfriars, June 17, 1846.

"INDUSTRY—ECONOMY—PERSEVERANCE."

MINING COMPANY OF IRELAND.—The stated HALF-YEARLY ASSEMBLY of the Mining Company of Ireland will be HELD at the company's office, No. 30, Lower Ormond Quay, on Thursday, the 2d of July next, at Two o'clock noon, for the purpose of receiving a report, with abstract of the company's accounts, for the half-year ending 1st of June last, and to elect auditors for the ensuing year.
Dublin, June 17, 1846. By order, RICHARD PURDY, Secretary.

ROYAL SANTIAGO MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of the shareholders will be HELD at the office of the company, on Wednesday, the 8th of July next. The chair will be taken at One o'clock precisely, when the directors will make their report, and the order of a dividend.—38, Broad-street-buildings, June 18, 1846.

ST. JOHN DEL REY MINING COMPANY.—Notice is hereby given, that the EIGHTH HALF-YEARLY DIVIDEND, being TEN SHILLINGS per share on the shares in this company, will be PAID at this office on Saturday, the 20th inst., and any succeeding day, between the hours of Ten and Four.—Forms for claiming the dividend may be obtained at the company's office, and must be left three clear days for examination, previous to payment.
GEO. D. KEOGH, Secretary.
8, Tokenhouse-yard, Lothbury, June 9, 1846.

PENNANT LEAD AND COPPER MINING COMPANY,

DINAS MOWDDWY, COUNTY MERIONETH.

NOW IN WORK ON THE "COST-BOOK" PRINCIPLE.

6000 shares.—Deposit £1 per share.
COMMITTEE OF MANAGEMENT.
Joseph Carrington Ridgway, Esq., Roehampton Lodge, Roehampton
B. Forrester Scott, Esq., Park-street, Westminster
Calverley Richard Bewicke, Esq., Barham House, Beccles
Charles Dunbar Atkinson, Esq., Wakefield
William W. Mansell, Esq., Dorchester-place, Blandford-square.
CONSULTING ENGINEER.
Thomas Killo, Esq., jun., Civil Engineer and Mineral Surveyor, Redruth.
SOLICITORS.
Messrs. Pocock and Marston, 10, Norfolk-street, Strand.
BANKERS.
Messrs. Cocks, Biddulph, and Biddulph, London.
OFFICES—No. 4, SALISBURY-STREET, STRAND, LONDON.

PROSPECTUS.

Pennant Lead and Copper Mine set extends over about 900 acres, and is situated in the centre of the lordship of Mowddwy, county Merioneth, which is admitted to be one of the richest mineral deposits in the kingdom. It is held under lease from the lord of the said manor, at the usual royalty of 1-10th, for a term of 21 years, renewable for the same period, on payment of a fine.
Pennant is in the immediate vicinity of the mines, on the same manor, of Craigwen, Foel Rhydd, and Cowarch, which are in course of most satisfactory working, and producing ore, which yields from 70 to 80 per cent. of lead, in addition to a considerable quantity of silver. These facts, of themselves, are sufficient to show the value of the property; and as nearly all the lodes on these sets cross Pennant, there is every reason to expect an equally favourable result; while the rapidly-increasing value of lead encourages the more extensive expenditure in the workings, which a company would do. It is a well-known fact, that the requirements of lead follow those of iron; and it is almost superfluous to allude to the extraordinary and increasing demand which exists for the latter.
The backs of several of the veins have been exposed, and an adit is in course of driving. The high road from Bala to Mallwyd runs along the set, and the River Dovey is at the base of the mountain. It is about 12 miles from the port of Denbigh; and, as various projects are before the public for railway communication in this district, there is little doubt but that a short time will furnish direct and speedy transit to London, Liverpool, &c., and wholly supersede the necessity of having recourse to water carriage.
The bill for the Worcester and North Dymallyn Railway, brought forward by the Great Western Railway Company, has been read a second time in the House of Commons. The line runs near to the Pennant Mine, as shown on the map.
There is an abundant supply of water for every description of machinery, and as the lodes are in the mountains, the fact of driving adits unwaters the mine, and does away with the necessity of steam or other power for that purpose, which is so expensive and troublesome an operation in Cornwall, and other places where the country does not furnish such natural facilities.
The object of the company is to develop and bring into full work the various resources of this set, and to be in a position to make arrangements in respect to other sets, should the shareholders hereafter so determine. The capital formed from the payment of deposits will be fully sufficient to work the Pennant set.
The operations of the company are carried on under the "cost-book" principle, which exempts the company from the provisions of the Act for the Registration of Joint-Stock Companies (7 and 8 Vic., cap. 110), the 63d section of which enacts:—
"Provided always, and be it enacted, That nothing in this Act contained shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, and quarries, of what nature soever, on the principle commonly called the cost-book principle."

The capital realised from the deposits is considered a sum sufficient to bring the undertaking into a paying state; but, in the event of more being required for general purposes, the 16th clause of the "cost-book" provides—
"That no further call than that authorised by the fourth resolution (the deposit) shall be made before the 1st day of January, 1847, and that three months' clear notice of every future call shall be given by the pursuer for the time being, by circulars to be sent to each adventurer or shareholder, by post—provided always that a period of three calendar months shall elapse between the making of any two calls, and that no call shall exceed the sum of £1 per share."

Under the "cost-book" principle, shareholders have the right of determining their responsibility by giving notice of their intention to relinquish their shares, and on forfeiture of all previous payments. The 21st clause states—
"That any adventurer or shareholder may determine his or her responsibility or liability, with respect to the affairs of this mine, upon his, or her, giving notice, in writing, to the pursuer of the company for the time being, of his, or her, desire of retiring from the company; and also upon depositing with the said pursuer the share or shares held by him, or her, and signing a relinquishment of all claims or demands on the company in respect to such share or shares."

For the original purchase of the grant, the sum of £5000. will be required; and, in consideration of the works done in developing the mine, and of the transfer to the company of the lease of Pennant, with all its rights and privileges, the present lessee to have 600 paid-up shares, in addition to the sum of £200, which he has already paid for working and other expenses.

Applications for shares to be made to the pursuer, at the offices of the company, No. 4, Salisbury-street, Strand; or to the solicitors, Messrs. Pocock and Marston, No. 10, Norfolk-street, Strand; or Charles Godwin, Esq., 2, Royal Exchange-buildings, where prospectuses, reports, maps, and every information may be obtained.

POLKINGHORNE'S PATENT METHOD OF TREATING TIN ORES.

Messrs. POLKINGHORNE & CO. beg to acquaint ADVENTURERS, and OTHERS interested in TIN MINES, that they have just obtained HER MAJESTY'S LETTERS PATENT for the SOLE USE of a COMPOUND SOLUTION, effectually to CLEANSE TIN ORE from all extraneous metals—thereby increasing its value from £2 to £4 per ton.
Messrs. P. and Co. are NOW READY TO SUPPLY the article from their manufactory, COPPERHOUSE, HAYLE, CORNWALL.

In casks of 10 gallons each, which quantity is sufficient for a ton of ore.—Price 10s. per cask; and license 5s. per ton of ore.—N.B. Every information can be obtained by applying at the patentee's offices, 12, Clement's-lane, London.—April 4, 1846.

JAMES LANE, SHARE AGENT

HALL OF COMMERCE, LONDON.

JOHN PHILLIPS, MINE SURVEYOR AND REPORTER,

POUL-LOGGAN, CORNWALL.
OFFERS his SERVICES, by the promptest attention, to any business of INSPECTION and ADVICE.—Terms, One Guinea per day, besides consequent expenses.

WILLIAM TRENEY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.

OFFICES, No. 50, THREADNEEDLE-STREET, LONDON.

PAUL RABEY, JUN., AND CO., MINE AND RAILWAY SHARE AGENTS.

OFFICE—No. 12, COPTHALL-COURT, LONDON.

WILLIAM FOX AND SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c.

MESSRS. LAMOND, SMALE, and LAMOND'S PUBLIC SALE OF RAILWAY SHARES, &c. are HELD, at the Hall of Commerce, Threadneedle-street, every TUESDAY and FRIDAY, at One o'clock precisely.—Orders received until Four o'clock of the day prior to sale.—London, June 19, 1846.

MINING OFFICES, REMOVED FROM 16, CORNHILL to 1, THREE KING COURT, LOMBARD-STREET.—Mr. R. TREDINNICK (of Cornwall), having established PRACTICAL AGENTS and CORRESPONDENTS in every MINING DISTRICT, whereby he obtains early and accurate information respecting MINES, proffers his services to capitalists and adventurers in the PURCHASE and DISPOSAL OF SHARES.

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST IN CORNISH AND FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence. Applications to be made to Mr. JAMES HEIRTON, mining agent, No. 3, Adam's-court, Broad-street, London.

MR. HENRY ENGLISH, leaving town, begs to refer to his former advertisements, and to state, that his arrangements, as at present made, are Caradon district, 22d till 25th; Callington district, 26th and 27th; Tavistock and Wheal Maria district, 29th till 3d July; the mines generally in the districts between Plymouth and Launceston, up to the 4th July; and will then proceed to St. Austell, Fowey, Redruth, Camborne, Helston, and Penzance, returning eastward.—Letters may be addressed to the Post-office, in either locality; or, if sent to his offices, 5, Shorter's-court, Throgmorton-street, will be duly forwarded, and meet with attention. Mr. E. courts the aid of all parties interested in mines, and will be glad to receive any introductions or powers, to inspect—as also plans or sections.—June 20, 1846.

LAMERHOVE WHEAL MARIA LEAD AND COPPER MINE:
WHEAL CONCORD SILVER-LEAD MINE:
WHEAL MARY COPPER MINE:
ROSCARROCK SILVER-LEAD MINE:
WHEAL WALTER LEAD AND COPPER MINE:
LSTWITHEL CONSOLS COPPER MINE:
WHEAL WEEKES:
WHEAL HILWELL:
THE BUSINESS OF THE ABOVE MINES (now in operation on the cost-book system) is conducted at No. 4, KING-STREET, CHEAPSIDE, LONDON, where all INFORMATION respecting them, and the value of the shares, may be obtained.—Specimens from each mine may also be inspected.

WHEAL KELLY:
COSHEEN COPPER MINE (county of Cork).
A FEW SHARES in the two last-mentioned mines remain TO BE DISPOSED OF.
Dated June 20, 1846. JAMES CROFTS, Secretary.

VIRTUOUS LADY COPPER MINE:
WHEAL BEDFORD COPPER MINE:
TAVY CONSOLS COPPER MINE:
GREAT WHEAL WILLIAMS COPPER, LEAD, & TIN MINES:
THE BUSINESS OF THE ABOVE MINES IS CONDUCTED

at No. 5, BUCKINGHAM-PLACE, STONEHOUSE, DEVONSHIRE, where all particulars may be obtained. WALTER LOMER, Fuser.

IRON RAILS.—THOS. BALLS, of No. 39, OLD BROAD-STREET, LONDON, has always on SALE a quantity of RAILS, for company's or contractor's use, either for prompt or distant delivery, and at prices below the current quotations. Payment—cash, or approved bills.

A PARTY, who has to give an ORDER and SPECIFICATION for TWO HUNDRED TONS of RAILWAY BARS, on or before the 1st of July next, wishes to DISPOSE OF THE SAME, upon advantageous terms. They are to be delivered during the next two months; to be of ordinary sections—not to exceed 94 lbs. per yard—Staffordshire make.—Apply by letter, to Box F. 15, at the Post-office, Liverpool.

WANTED TO PURCHASE, A SECOND-HAND PUMPING APPARATUS, for a SHAFT of 145 yards in depth. The PUMPS to be 10 inches in diameter, in two lifts, and to contain all necessary fittings, working-battens, pump-rods, &c.—Application to be made, stating particulars as to price, &c., to Mr. Mitcheson, mine agent, Langton, Newcastle, Staffordshire.

WANTED, FOR THE GLEN OSMOND MINE, near ADELAIDE, SOUTH AUSTRALIA, a competent MINING CAPTAIN.—Any one inclined to undertake the situation, is requested to state his terms, and send his testimonials, which must be quite unexceptionable, both as regards skill and character to John Offord, Esq., St. Austell, Cornwall.

SITUATION WANTED.—A YOUNG MAN, who has been engaged in an extensive mining establishment in Cornwall for nearly nine years, and who has also served in a mining office in London for a short time, is desirous of rendering his SERVICES to any COMPANY, either at HOME or ABROAD.—Satisfactory references can be given as to his competency, &c.—Applications to be made to "J. P. 54, Pratt-street, Camden Town.

CALLINGTON MINES COMPANY.—The directors having met this day, pursuant to the Notice issued to the shareholders, for the purpose of ELECTING a DIRECTOR, in the room of P. Stainsby, Esq., who had resigned his seat; and it appearing that only one shareholder—holding 10 shares in this company—had signified his dissent to Mr. Stainsby's re-election, it was resolved unanimously:—
"That PETER STAINSBY, Esq., be RE-ELECTED a DIRECTOR of this company."
44, Finsbury-square, June 18, 1846. (Signed) R. HODGSON, Chairman.

SILVER VALLEY MINING COMPANY.—At the First Annual General Meeting of the adventurers, held, pursuant to circular, at the offices of the company, 44, Finsbury-square, on Friday, the 12th day of June inst., it was resolved:—
Moved by Mr. Hayne, seconded by Mr. J. E. Goodhart, and carried unanimously:
1. That the reports and accounts now read be received, adopted, and entered in the cost and transfer book.
Moved by Mr. J. E. Goodhart, seconded by Mr. J. Smith, and carried unanimously:
2. That the thanks of the meeting be given to the chairman and the directors, for their able management of the affairs of the company.
R. HODGSON, Chairman.

MAPS OF THE CORNWALL MINING DISTRICTS.

R. SYMONS, LAND, MINE, AND RAILWAY SURVEYOR,

29, LEMON-STREET, THURRO.

Respectfully informs all parties CONNECTED WITH THE MINES in CORNWALL, that, in pursuance of his purpose—announced in the Mining Journal, West Briton, and Cornwall Gazette, in the spring of last year—he has been preparing for publication, by subscription, a SERIES OF MAPS OF THE CORNISH MINING DISTRICTS, and that

No. I.—containing the parish of GWENNAP, is now published.

No. II.—containing the parish of CAMBORNE; and No. III., that of SAINT JUST, are nearly ready for delivery.—Drafts of several other districts are nearly prepared, and arrangements have been made for taking the remainder.

Each map will show all the known lodes, boundaries of sets, and all other objects usually included in individual plans of sets. The maps will be coloured, either as to sets, soils, lodes' rights, or estates (so called), as may be directed by the subscribers.

Price 7s. each—coloured.

Orders received at the office of the Mining Journal, 26, Fleet-street, London; by Mr. George Clyma, printer, Truro; and by the publisher, as above.

R. S. offers to furnish PLANS of MINE SETS, at any required scale, on terms peculiarly easy. This he is enabled to do, from the maps, at a large scale, of nearly all the mining districts, now in his possession. Mining Sections also drawn.—Orders will be promptly executed.—Truro, June 18, 1846.

Now ready, in 1 vol., post 8vo., price 10s. 6d.

MANUAL OF PRACTICAL ASSAYING: intended for the USE OF METALLURGISTS, MINERS, CASTERS, AND ASSAYERS IN GENERAL.

By JOHN MITCHELL, Member of the Chemical Society.

London: H. Baillière, publisher, 219, Regent-street.

Transactions of Scientific Bodies.

MEETINGS DURING THE ENNING WEEK.

Society.	Address.	Day.	Hour.
Asthetic	14, Grafton-street	Saturday	2 P.M.
Geographical	Waterloo-place	Monday	8 P.M.
British Architects	10, Grosvenor-street	Monday	8 P.M.
Medical and Chirurgical	53, Berners-street	Tuesday	8 P.M.
Civil Engineers	25, Great George-street	Tuesday	8 P.M.
Zoological	11, Hanover-square	Tuesday	8 P.M.
Synod Egyptian	11, Mortimer-st. Cav.	Tuesday	8 P.M.
Society of Arts	Adelphi	Wednesday	8 P.M.
Pharmaceutical	17, Bloomsbury-square	Wednesday	9 P.M.
Royal Soc. of Literature	4, St. Martin's-lane	Thursday	3 P.M.
Philological	12, St. James-square	Friday	8 P.M.
Royal Botanical	Regent's-park	Saturday	4 P.M.

INSTITUTION OF CIVIL ENGINEERS.

PRESIDENT'S CONVERSATION.

The first of a series of four conversazioni, to be given by Sir John Rennie, the president of this very useful and flourishing institution, took place on Saturday evening last, at his residence, in Whitehall-place, and was most numerous and brilliantly attended by noblemen and gentlemen connected with or interested in scientific pursuits. The company on their arrival were received, with his usual urbanity, by the president, who was supported on the occasion by the vice-presidents and council and secretary of the institution, and immediately commenced their inspection of the many beautiful objects and models that were profusely scattered through the noble suite of rooms fitted up expressly for the occasion. To enumerate everything that was interesting would greatly exceed our limits; we must, therefore, be content to notice a few of the things which struck us as being most remarkable.

Amongst the models were an exceedingly good one of the biscuit-baking machinery, invented by Grant, and erected at Portsmouth Dockyard by Messrs. Rennie. Prosser's machine for drawing and welding metal tubes. Sturte's machine for ventilating mines by exhausting the upward current in the air shaft. Mr. McClean's proposed method, for conveying railway trains across the river Dee, by means of a platform travelling upon rails fixed on piles across the bed of the river, leaving the full depth of water above, by which the ordinary navigation can be carried on without impediment. The St. Katherine's Point and Menai Lighthouses, sent by the Trinity Board. Mr. Robert Stephenson's long boiler narrow gauge locomotive, and the Great Western broad gauge locomotive. Several models from the Admiralty collection, showing Sir W. Symon's forms of steamers and vessels of war, and a very complete model of the *Victoria* and *Albert* steam-yacht. A number of models showing the arrangements by Rennie of horizontal engines for applying steam-power to the screw propeller, as arranged for the guard ships, in which the machinery is placed entirely out of the reach of shot. Models of the engines of Her Majesty's steam-frigate *Bulldog*. Side lever and double cylinder engines, by Messrs. Maudsley and Field; a model of the Ferraby sluice, in the Auchmolle drainage, erected by Sir John Rennie, whose design for the improvement of the great Wash in Lincolnshire, by which almost the extent of an entire county will be added to the coast, was also displayed in a model, showing on one side the present state of the outfall, and on the other the embankments and works as they will appear when completed. Sections of the great works at Sheerness Dockyard, by the late Mr. Rennie; plans of the proposed harbour of refuge at Dover, by Mr. George Rennie; a model illustrating Mons. Hallette's system for obviating the disadvantages of the present continuous valve of the atmospheric system, and a model of Mr. Ricardo's ingenious instrument for registering the velocity of railway trains. We also observed two beautiful machines at work in the room, the one being Wheatstone and Cooke's electric telegraph, and the other Mr. Oldham's machine for numbering and paging registers at the Bank of England, which is also applicable for all tickets where a series of numbers is desirable. The machine, however, which attracted the greatest amount of attention from the company present was that of Mr. Rand, for making collapsible tubes to hold artists' colours and scents, and which can be adapted to many other useful purposes. The apparatus appeared to differ little from the usual stamping machine, but nevertheless presented a beautiful adaptation of the scientific principle that tin, when under the pressure of about 20 tons to a circular inch, will run according to the law of fluids. In the machine exhibited the pressure was about five tons, and a flat, basin-shaped capsule being smartly struck by a solid cylindrical punch, sprung upwards, embracing the punch closely, and taking its shape, so as to form a perfect and homogeneous tin tube. The numerous applications of this apparatus are quite obvious, but the vessels produced are more particularly available for the preservation of artists' colours, essential oils, and all semi-fluid substances which are difficult to be got out of bottles, and which become injured by the introduction of air into the ordinary bottle, after any portion has been extracted. Numerous interesting works of art were profusely scattered about the room, amongst which we must enumerate Mr. Thomas's beautiful statue of a female warrior. Some superb specimens of machine wood-carving, by Taylor, Williams, and Jordan; oak hand carvings, by Rogers; some spirited proof etchings, by Thomas Landseer and Ward; and an engraving of Mr. Robert Stephenson's curious tube bridge proposed to be carried across the Menai Strait. Nor should Mr. Sang's exceedingly beautiful decoration of the rooms appropriated for the reception of the company, be passed over without notice.

The guests consisted of almost everybody of note in the scientific world now in London, as also of several noblemen and gentlemen amateurs and supporters of the fine arts; perhaps, however, the most remarkable personage present was Suleiman Pacha, who was conducted through the rooms by Mr. Charles Manby (the secretary to the institution), who exhibited and explained to this distinguished guest, as to all the other foreigners, the various objects most worthy of attention.

ROYAL COLLEGE OF CHEMISTRY.

The ceremony of laying the first stone of the new laboratories of this institution was performed on Tuesday, the 16th inst., by his Royal Highness Prince Albert (the president of the college), in the presence of the council and members. The Prince was attended by the Marquis of Abercorn, Earls Clarendon, Ducie, Antrim; Viscounts Palmerston, Sandon, Ebrington, Newry, and Morne; Chevalier Bunsen, Charles Drouet; the Lords Bishop of Norwich, Durham, and Oxford; the Dean of Westminster; the Right Hon. W. Bingham Baring, M.P.; Richard Cobden, Esq., M.P.; John Bright, Esq., M.P.; Thomas Wyse, Esq., M.P.; William Marshall, Esq., M.P.; Hon. Colonel Cathcart, Colonel McDowell, Sir James Clark, Bart., Sir C. Lemon, Bart., Sir R. Throckmorton, Bart.; Sir R. Westmacott, Sir George Cayley; Professors Brande, Graham, Wheatstone, Redwood, Hoffman, Blyth; Drs. Paris, Henry Holland, Prout, Southey, Grant, Pitman, Spurgeon.—There was also a large attendance of ladies.

His Royal Highness having placed a history of the college, &c., into a cavity of the stone, and laid the stone.

Lord CLARENDON said, he had been deputed by the council of the college to convey to his Royal Highness the expression of their gratitude to his Royal Highness, for the great and important service he had that day rendered them, by laying the first stone of a building in which practical instruction was to be given, and where researches in the science of chemistry were to be conducted. The influence of his Royal Highness's exalted station could not be more beneficially exerted for the good of his country, than by the patronage and aid he so liberally bestowed on the many valuable institutions existing for purposes of benevolence, and for the advancement of scientific knowledge. From the first projection of this institution, his Royal Highness had taken a lively interest in it, not merely from a general impression of the good it might produce, but from an intelligent, and he might say minute, acquaintance with the subject, and its bearings upon the commerce, arts, and manufactures of the country. Through the influence of his Royal Highness with his Majesty the King of Prussia, he had secured the services of their distinguished professor—services which, since his arrival in this country, must have fulfilled his Royal Highness's most sanguine expectations. They did not forget the liberality of the Prince in contributing to the funds of the institution—and were fully aware that when he consented to become the president of the college, he would not content himself with taking that office merely nominally, but he would be an active friend of the institution. This institution, he could entertain no doubt, was destined to promote that science, which more than any other was interwoven into all the active pursuits of this country—in agriculture, manufactures, and commerce. The establishment of practical laboratories not only furnished the students with technical instruction, but it leads the mind into the channel, and cherishes the faculties for the deeper investigation of Nature. The interest taken in chemistry generally, and in this college especially, by his Royal Highness, must act as a powerful stimulus on every member and student in the school, calling forth their best exertions to elevate the character of the college by their zeal and ability.

The Bishop of Oxford said, he had been requested to follow the noble earl, and to express the thanks of the vice-presidents and the council to his Royal Highness for the act just performed—an act, the true interpretation of which was, that his Royal Highness was ever ready to condescend even to personal and corporeal labour to set an example to all men, of the necessity for their continued exertions. The council of this college did not belong to that class of persons who considered that the pursuits of true philosophy had any tendency to alienate men from their duty to God, to diminish the reverence they should feel for the Great Author of Nature, or to disqualify them for devotional study of his revealed Word; on the contrary, they considered that the more qualified men were for profound researches into the wonders of Nature—the more the mental faculties were cultivated, the more likely were they to enter upon researches into the will of the Almighty, as he had been pleased to reveal it to us. Not only had we the example of our own Newton to adduce, for proof of the harmony of scientific and divine knowledge, but in the minds of some of the greatest chemists, past and present, this happy association had been remarkably manifested. In conclusion, he could only again tender the acknowledgments and gratitude of the council and members of this college, for the invaluable service his Royal Highness had conferred on them that day, and for the incessant encouragement and aid he had rendered to this institution.

MODEL RAILWAY IN FRANCE.—It seems that Arles, the place where Roman structures 1800 years old exist in such perfect preservation, is now prompting French engineers to similar exertion. The following is a short extract of the projects for the present buildings. The viaduct of the railway of the Durance River, will have a length of 493 metres between the abutments, besides 20 metres of abutment at each side, which will give it an absolute extension of 533 metres. Its height is to be 9.36 metres, computed from low-water mark to the level of the rails; its breadth 8 metres between the parapets. It is to be supported by 20 piers of 3.50 metres thickness, combined together by 21 elliptic arches of 20 metres opening. The elegance of the piers, the gracious opening of the arches, and the imposing mass of the viaduct, will make it one of the finest structures of the whole line. After this immense art-structure, the thing next worthy of admiration is the cutting of the rock of la Roque—an immense mass of stone, which was to be cut through from top to bottom to the extent of 125 metres by 25, which yielded a mass of 42,000 cubic metres of debris of rock. Especially also is to be noticed the nicety of the 19 cottages of the guards of the line, between Arles and the Durance. To each a little garden has been annexed, to employ profitably the leisure of the men and families. Follows then the monumental viaduct of the Rhone, which will connect, by the way of Tarrascon, the Avignon line with that of Bordeaux to Cette. This gigantic structure is already begun. It is only 370 met. from the suspension bridge of Beaucaire; thus two of the finest and hugest modern structures will be erected at a short distance from each other. The activity on the railways in the south of France is now so great, that in the arondissement of Aix alone 1390 workmen are employed.

RAILWAY CHAIRS.—This method of manufacture has been much improved by the erection of an engine on the London and Birmingham Railway, by which circular saws, running from 900 to 1100 revolutions per minute, rip the plank into scantling, and afterwards cross-cut the 13-in. lengths. Two more cutters were adapted on the top of the other four, but gradually larger. These took in the 13 in. lengths, without their going into the hands of the joiner; and the key was forced through by a plunger working up and down, by a guide and parallel motion on the end of an iron beam. A similar plunger forced them through the compressing box; and 1100 were completed in 10 hours. A part of the power may also be applied to drill the stone blocks for the permanent way. The cost of the whole, with the necessary shops, amounted to about 1500l.; but the keys may be made for 8l. per thousand, if a cheap pattern be adopted. The circular saws also cut up the waste wood into trenails, which were bored by a lathe adapted to that purpose, the whole being worked by steam. It is found to save the labour of 15 men. When this sort of chair is used, it will occasion a great saving of time and trouble, if all the chairs are either made by one contractor, or every one gauged before it is received; for if there be the least difference in the size, it requires a different set of cutters and a different compressing block for each sort, besides giving a great deal of trouble to the men employed in laying the way; the same remark applies to the rails. The best way is to take plenty of time, by beginning early. Find a respectable man, and let him have the whole job, at a sum varying with the price of the iron.—*Lecturer's Treatise on Railways.*

We have been favoured with the two last editions of the *Annuaire de l'Economie Politique* (for 1845 and 1846). These works are got up with great care—the contributors being some of the most scientific men in the French capital—and they contain a vast deal of important information, particularly in a statistical point of view. To the political economist they will be found most useful, as the articles treat upon every subject that can interest, whether it be mining, agriculture, manufacture, and statistics, all of which are thoroughly digested by a masterly hand. Besides the above, we can strongly recommend the monthly review, the *Journal des Economistes*, which treats in a very able manner on every subject connected with political economy, whether in this country, France, the continent of Europe, or the new world, and is, without exception, one of the best of the Paris periodicals.

THE MANUFACTURING TOWN OF NAMUR.—Namur is to Belgium what Sheffield is to England; the cutlery of the Netherlands is made there. Serainne, more like a street for continuousness than a town for architecture, nearly a mile in length, stretches along upon the river Meuse between Namur and Liege. An old episcopal residence, in which the prelate princes of Liege resided in the times of feudal power and grandeur was a few years ago turned into the vestibule and front section of a magnificent factory for casting and constructing machinery for almost every mechanical purpose; whether for peaceful arts, or as implements of destruction. The palatial gardens,—no longer the luxurious retreat of lordly churchmen, but now made the storehouse or depository for crude and manufactured iron, and occupied with heaps of coal,—have altogether lost their episcopal aspect; and, while yielding to the darkening and sombre influences of some 50 wide mouthed chimneys, and their issuing flames or smoke, the prelate dignity of the scene may seem to have disappeared—but a no less intellectual and industrious destiny prevails. Ingenuity and patient labour here preside; while nearly every description of iron-work is fabricated, from the heaviest and most potent engine, to the most complicated or refined instrument of utility—from the monumental lion, which couches on the field of Waterloo, to the lady's penknife, which is deposited in her reticule. The vast pile of building forms a town within itself. The establishment possesses a great advantage in being placed over the bed of coal from which its exhaustless supply is dug; and the fuel being raised within the limit of the factory, and close to the furnaces near to which the mineral ore is found, the labour is much diminished compared with many English foundries. The workshops of the craftsmen are situated upon the line of railways on the banks of canals leading to the river. The blast furnaces, puddling furnaces, forges, and rolling mills, are on the opposite bank of the river from the houses of the operatives; but they maintain their intercourse between home and the shop by boats provided for their convenience and at their command. John Cockerill, as a prince among mechanics, was in partnership (a strange association, and uncommon for the trader,) with the late King of Holland, as an engine-builder and machine-maker, which gave celebrity to this large establishment. There have been, and I presume there are still, 3000 employed in these works, receiving on an average about 2000l. in weekly wages. Cockerill sought to extend his connections and mechanical fame, especially in regions where manufacturing skill was precious. He died at Warsaw, leaving his wealth to his heirs, and his name on many Continental locomotives. A company has undertaken the management of his extended works, and employ an equal number of men in the same branches of manufacture; making not merely implements of destruction, as used to be the case at the Carron Works in Scotland, but also some of the first-rate locomotive engines for Prussian and other European railways, which are rapidly multiplying. The cotton factory is also thence supplied with spinning-jennies, and other machinery. Thus the school of Cockerill competes with the shops of Sharpe, Roberts, and other prime mechanists in England. The elements and occasion of Cockerill's success sprang from a source which working men were not quick enough to discern—at least they did soon enough discover and remedy the mistake. The law which short-sighted monopoly had enacted, as it was considered for the protection of the machine-maker in England, preventing the exportation of machinery from this to Continental countries, gave the stimulus and premium to enterprise in those countries. For a while the smuggler profited by the interdiction, and gambled on the chances of detection. The machine of human thought, the mysterious engine of the busy mind, revolved its powers and principles in contrivance and imitation for production and supply. No law could contravene the laws of Nature and the gifts of God. Genius can summon its resource from Indus to the Poles, and self-interest has power enough to bind the winds and seas, fire and vapour of smoke. Monopoly was defied, and at length subdued. John Cockerill, and his friends, and men of like spirit, exported the men of thought and genius from England, who went forth and became the tutors of the men of Belgium. It was not enough to work and execute plans; they had Literary and Mechanics' Institutions in Cockerill's works and in others, for the training of handicraftsmen, who received their instruction from English mechanicians, and who have now filled the whole of the workshops of Belgium with foremen, and men capable of managing all kinds of machinery, and of inventing, as well as producing the manufacture of machinery, such as will very nearly compete, with your most skilled engine-makers of England.—*Massie's Summer Ramble in Belgium.*

A CERTAIN CURE FOR BILE, HEADACHES, AND ALSO FOR WEAK AND DEBILITATED STOMACHS. BY HOLLOWAY'S PILLS.—Nothing tends so much to bring on incurable diseases, affecting either the heart, the liver, or the lungs, as an unhealthy state of the stomach, which, in the first instance, causes loss of appetite, loss of strength, and loss of energy. Now, if a few doses of Holloway's justly celebrated pills be taken to purify the blood, they will immediately give a healthy action to all the vitals, and act like a charm upon the whole system—restoring health and vigour, even in cases where the physician's skill had been of no avail.—Sold by all druggists, and at Professor Holloway's establishment, 244, Strand, London.

Prince ALBERT then said: My Lords—It has given me great pleasure to lay this foundation stone, and I have much satisfaction that I have been able, in any way, to promote the establishment of a school of chemistry. I believe that a school of practical chemistry has long been wanted in this country; and I am satisfied that, under its distinguished council and talented officers, this college will supply that want. I am sure that, when its importance is duly appreciated by the British public, it will be well and liberally supported. Independently of its utility in a scientific point of view, and for affording instruction to a great number of young men, the nation must derive the greatest advantages from it in the improvement of our arts, manufactures, and commerce, and, I am sure I may confidently say, our agriculture. I beg to assure the council, that they may at all times command my best assistance in carrying out their views; and that, whenever my services are required, I will do all that is in my power to promote the interest and secure the prosperity of the college.—The ceremony then terminated.

ON THE COHESIVE FORCE OF WATER.—In the course of a very interesting lecture, at the Royal Institution, Professor Faraday explained that water was known to us in three states—the “solid,” in the state of ice, where the greatest attraction existed between its particles, and it required some amount of mechanical force to separate it—the “liquid,” where its particles were less attracted towards each other, and were free to move—and the “vaporous” state, where its particles were still more further separated by heat, and possessed little or no attraction towards each other. It was of the cohesive force of water in its fluid form that he was about to speak; and it must also be remembered, that what is true of this force in water, is also of all liquids. The Professor then showed an experiment, well known as exhibiting the adhesion of water. A plate of glass is suspended from a balance over a small basin, and so accurately counterpoised by weights, that the addition of even a grain would turn the balance. If in this state water be poured into the basin, so as barely to touch the under surface of the glass plate, it is found that it will now support a further weight of $\frac{1}{4}$ ounce placed into the opposite scale. And this is owing to two forces which now come into action; first, the adhesion of the water to the glass, and then the still more powerful adhesion of the particles of water among themselves. This phenomenon was, till very lately, attributed to capillary attraction; but Dr. Henry, of Princetown, conceived that it must be due to other causes, and he was induced to make a variety of experiments on the matter, and the results arrived at, proved that the cohesive force of every square inch of water is equal to several hundred pounds. The Professor next referred to the experiments of the young philosopher, Donne, which are but little known in this country. Donne has found that, where water is carefully deprived of the air in solution, it may, if there be no breach of continuity among the particles, be raised to a height of 100 feet; while, under ordinary circumstances, 30 feet in round numbers is the greatest altitude at which it can be supported. This phenomenon depends also upon the strong cohesive force residing in these particles of water when deprived of all extraneous matter, for the moment a little bubble of air is let in—that is to say, the moment a breach of continuity occurs, the water obeys the natural laws and finds its own level. The other important fact made out by the experiments of Donne, is as follows:—Water carefully deprived by boiling of all the air in solution, instead of boiling at 212°, the boiling point of water, under ordinary circumstances, may be raised to 275° Fahr., without showing any signs of ebullition, as long as the continuity of the particles of water is not broken. Thus, a force equal to three atmospheres, is restrained only by the adhesion of the particles of water. At the temperature of 275°, it suddenly bursts into ebullition, with a loud explosion, dashing the containing vessel into fragments. May not steam-boiler explosions be sometimes thus accounted for? The Professor lastly referred to the experiments of Boutigny; which, however, have been so often repeated in this country, as to be familiar to all students of science. The experiments of freezing water and mercury in a red-hot vessel were then exhibited, as before explained in this Journal.

THE CONTINENTAL PATENT METAL-GLASS WOOD COMPANY.—The complete success which has attended the operations of Payne's patent process for the metallisation, and consequent preservation, of every description of timber, under every circumstance, in this country, and the wide field which is now opening on the continent for its advantageous application, has induced the formation of a company for the purpose of purchasing and working the foreign patents—viz.: for France, Austria, Belgium, and Holland. We have on so many occasions described the process and advantages of Payne's patent, that a passing allusion to some of its valuable properties will suffice. It is necessary to premise, that the process is simple and inexpensive—the wood is saturated, by means of exhaustion and pressure, with sulphate of iron, and afterwards with an alkaline solution, by which means an insoluble metallic substance is created in the pores of the wood by chemical decomposition. The economy of the process, after the first outlay for machinery and stations, is remarkable, as may be inferred from the price of the metals employed in former processes—mercury and copper; the former being enormously expensive, while the cost of the latter bears to that of iron, the metal employed in the present process, a ratio of 40l. to 3l. 10s. The wood is made to partake of the durability of metal; while its elasticity is preserved in full force, as proved by the fact that, thus prepared, it has recovered from a deflection made by 140 tons on a segment of an iron wheel 8 in. broad in the tire; it is also rendered unflammable, is impervious to the ravages of insects, and the process is equally applicable to timber just hewn, as to the best seasoned—in fact, it renders the most recent-cut wood immediately fit for use. The great demand which must arise from carrying out this system on the continent, and the advantages which will accrue to those who invest capital in the undertaking, is fully apparent. In France, Austria, and Belgium iron is dear, and the price increasing; wood, on the contrary, is cheap, and therefore a system, which will enable the cheaper article (wood), for numerous purposes, to supersede the dearer (iron), gives every prospect of a large and profitable return. In Belgium and Holland, the sole article of wooden clogs (or *sabots*), worn by the people, would give a considerable income; and in France and Austria, where wood is almost the only fuel, a profitable branch of business would arise, in saturating wood for fuel with an aluminous solution, rendering it more lasting in the fire, without injuring its combustibility. The process has already been used on the Paris and Seaeau Railway. The Great Northern of Austria Company have sent agents to England to judge of its merits; and there is every probability, that large supplies will be required by them, as soon as the necessary machinery is established. In fact, it is likely that a large portion of the continental railways, which have yet to be commenced, will adopt this plan, when its economy and advantages are fully appreciated. The arrangements made with the patentee are, that the greater portion of the purchase money is dependant on the success of the undertaking, which will enable the company to commence operations with a comparatively small capital; it is, therefore, proposed to raise sufficient to purchase the patents and commence the works, and the returns being immediate, it is confidently anticipated that three calls of 1l. each, above the original deposit of 2l. per share, will be amply sufficient, although the capital proposed is 100,000l., in 10,000 shares of 10l. each—2500 shares are to be reserved for France, Austria, and Belgium. We consider the company holds out prospects of no common kind, and that, under all the circumstances which evidently combine for a most advantageous development of the patents on the continent, a most remunerative return on the capital must be the result.

THE COAL TRADE.—In the present state of competition and depression of the coal trade in the north, the best Wallend coal is now selling at 20s. 6d. per Newcastle chaldron of 2 tons 13 hundred weights, free on ship board. Under the regulations of the coal trade the price was 30s. 6d.; but when the coal-owners have to freight ships to carry their coals either to the London or the markets of the out-ports, they almost invariably receive less for the coals than they do when they sell them in the way termed *out and out*, at the reduced price. It is generally admitted that the Marquis of Londonderry possesses peculiar advantages both in means of railway carriage to, and his facilities of shipment, at Seaham harbour; and that he can both load and ship his coals at a price to defy the whole coal trade. Amongst the other owners of the best Wallend coals—several of whom possess private railways and shipping docks, by means of which unlimited quantities of coal are led and shipped at easy rates, whilst others of them have what are called *short leads* by public railways—are the Earl of Durham, the Hetton Coal Company, the Haswell Coal Company, the South Hetton Coal Company, the North Hetton Coal Company, the Thornley Company, &c., &c. The whole of these collieries lie, upon an average, about nine miles from their respective ports of shipment, where they are led and shipped generally for 2s. 6d. per Newcastle chaldron. The depression of the coal trade is most heavily felt by the colliers whose produce stands only second and third class (for domestic uses) in the coal market; the whole of these collieries lie at greater distances from their ports of shipment than the collieries producing the best coals. The common coals generally are from 15 to 30 miles from the ports of shipment, and nearly all of them are conveyed by public railways. Many of these collieries have been opened out half a century before their legitimate time, owing to the great speculations which took place in the coal trade a few years ago. The inferior coals are now shipped for from 12s. to 15s. per Newcastle chaldron, and in many instances the cost of their transit from the pit's mouth to the ship will amount to half their selling price. Should the present state of the coal trade continue, nearly all the collieries producing second and third class coals, for domestic purposes, will be obliged to suspend their workings. The miners employed at them are little more than half their time at work; and in the struggle, as it were, for existence, some of the inferior coals are now almost expressly worked for the purpose of being burnt into coke. Collieries producing a good steam coal, and at the same time possessing easy facilities of loading and shipping, are going on favourably.—*Newcastle Advertiser.*

The Chinese make the sheets of the tea-chest lead in the following manner:—Two men have cauldrons of melted lead constantly ready; one sits beside a smooth flat stone, several feet across, with another flat stone to wield when necessary. The other man pours out a quantity of the melted lead on the stationary stone, and then the movable stone is instantly placed upon it, pressing it out into a thin sheet; these sheets are made rapidly.

Glossary of Foreign Mining Terms.

In compliance with the request of several correspondents, we lately commenced the publication of a complete series of technicalities used in English and Foreign Mining—in fulfillment of our promise, those of Cornwall and Derbyshire are completed; and we now continue the terms used in

SPANISH MINING.

- Lavaderos**—Gold washings; washing vats or tubs for separating the amalgam from the lama or slime.
- Lavadores**—Men who procure people to work in the mine; also, men employed to catch cattle.
- Lena**—Fire-wood.
- Lenadores**—The workmen employed to carry and serve the wood in the smelting furnace; also, the woodcutter; collectors and sellers of fire-wood.
- Lenter nillas**—Large vertical wheels of the stamping apparatus.
- Ley**—Standard of the metals; contents in pure metal.
- Ley de oro**—Quantity of gold contained in the silver.
- Ley de plata**—Quantity of silver contained in the ore.
- Libramiento**—Warrant for payment for bars of gold or silver delivered at the mint, or order for funds.
- Libranza**—A bill of exchange.
- Liga**—Flux.
- Limadura**—An appearance put on by the quicksilver in certain stages of the process of amalgamation, which is noticed at the edges of the amalgam, washed in the bowl for making a *tentadura*, or trial.
- Limpia**—Clearing out of rubbish and ruins from the old work in a mine.
- Lis**—A particular state of the amalgam observed by means of the *tentaduras*, or trials, in the bowl.
- Llano**—A plain, flat ground.
- Llevada**—Carriage; transport.
- Llevador**—Carrier, conductor.
- Lodo**—Mud.
- Losa**—A flat stone.
- Lumbrera**—An air shaft; an adit shaft.
- Macero**—He who has the charge and direction of crushing and grinding the ore in the tahonas, previous to amalgamation.
- Macizo**—A solid untouched part of the vein.
- Madera**—Timber.
- Maestro herrero**—Master blacksmith.
- Maestro carpintero**—Master carpenter.
- Magistral**—Copper pyrites, used in amalgamation.
- Malacate**—A horse whim.
- Malacatero**—A whim driver.
- Malacate doble—Malacate sencillo**—The former whim has bags made of two ox hides, holding 1250lb. of water; the latter, one hide, and holding half the quantity.
- Maiz**—Indian corn, the principle food used at the mines.
- Manantial**—A spring of water.
- Mandadero**—Errand boy.
- Mandon**—Master miner or overseer.
- Manga**—Level divided for ventilation; air pipes; a bag or strainer used to separate the quicksilver from the *pella*.
- Manganesa**—Manganese.
- Manta**—A blanket, or horse cloth, used to contain ores or tools to be brought up by the malacates, now replaced generally by sacks made of the fibres of the agave, or ox hides.
- Mantear**—To raise ores from the shaft in bags or mantas.
- Manto**—A bed or circumscribed stratum.
- Maquina**—A machine.
- Maquinas de vapor**—Steam engines.
- Maquila**—Rate paid to the proprietor of a mill, or reduction work, for reducing ore on another party's account; applied chiefly to reduction by amalgamation.
- Maquero**—One who dresses ores on hire.
- Marco**—8 ounces, or 1b. Spanish, equal to 3552 grains English.
- Marco de oro**—8 ounces of gold.
- Marco de plata**—8 ounces of silver. The marco de oro, or marco de plata, may be standard, or otherwise.
- Marmol**—Marble.
- Maroma**—A rope to pull or draw by as a hawser.
- Marquesitas**—Mundic; iron pyrites.
- Martillo**—A hammer.
- Martriquila**—A registry for miners, &c.
- Maza**—Stamp head for pounding the ores.
- Mecha**—A match, or fuse.
- Medida**—A measure.
- Mejora**—Improvement.
- Mejora de boca**—A term used when an improvement or alteration is made in the entrance to a mine.
- Memoria**—Weekly account of disbursements or mine expenses.
- Mercurio**—Quicksilver.
- Merma**—Loss of quicksilver in amalgamation, or of lead in smelting.
- Meson**—An inn mostly appropriated to muleteers, &c.
- Metal**—Metal, ore.
- Metal de ayuda**—Metal or ores added in smelting, to assist in the reduction of the silver ores; lead, or galena, for example.
- Metal pepena**—Selected and picked gold and silver ores.
- Metales communes**—Common ores.
- Metales de fundicion**—Ores for smelting.
- Metales plomosos**—Ores impregnated with lead.
- Metales porosos**—Porous ores.
- Metapiles**—Grindstones used in the tahonas; also pigs of copper used in the hot amalgamation.
- Merquite**—Robinia or acacia; a wood much used in mines.
- Mineral**—Ore; mineral; recently applied to a mining district, formerly and still called Real de Minas.
- Mineria deputacion de**—A tribunal, cognizant of mining matters, elected in most cases by the mine-owners of the district.
- Minero**—A miner, an underground agent.
- Minio**—Red lead.
- Modelos**—Models.
- Mojon**—A land mark, used to mark the limits of pertenencias.
- Molibdena**—Molybdena.
- Molienda**—The act of grinding or pounding the ores; sometimes used to designate the ores ground *La Molienda*.
- Molinet**—Shaft of tina.
- Molino**—Mortero—Stamping mill.
- Molones**—Crystallization of silver ores; very rich.
- Montana**—A mountain.
- Montes**—Woods.
- Monton**—A heap of ore; a batch under the process of amalgamation, varying in different mining districts. At Catoreo, 36 quintals; at Guanaxuato, 35 quintals; at Real del Monte, Pachuca, Sultepec, and Tasco, 30 quintals; Zacatecas and Sombrerete, 20; Fresnillo, 18; Bolanos 15; and at Valenciana, 32.
- Mozo**—A man servant.
- Muestras**—Samples.
- Mufla**—A tucere.
- Natas o Escorias**—Slags.
- Natron**—Native carbonate of soda.
- Negociacion**—Business; undertaking, as a mine, or set of mines, &c.
- Nicelo**—Nickel.
- Nitro**—Nitre.
- Nivel**—Level.
- Niveles de agua**—Water levels.
- Noria**—An endless chain with buckets attached, revolving round a wheel; it is used underground for drawing water out of the pozos or sinks, which are carried down to a greater depth than the principle shaft; also, a common superficial machine for raising water.
- Obras**—Workings.
- Ocre**—Ochre.
- Ocre rojo—Ocre Colorado**—Red ochre.
- Oficial de carpintero**—Journeyman carpenter.
- Oficial de Albanil**—Journeyman bricklayer.
- Ojo**—Bunch or small spot of ore in a lode.
- Ojo de pavilla**—Spots of rich ore.
- Ojo de vibora**—Black sulphuret of zinc.
- Onique**—Onyx.
- Opalo**—Opal.
- Operarios**—Workmen.
- Ordenanzas de mineria**—Code of mining laws.

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the western end, at the 18 fm. level, is 2½ ft. wide, producing rather more than 2 tons per fm.; the eastern end, at this level, is producing about 1½ tons per fm. The lode in the ends, driving east and west of winze, sunk under the 12 fm. level, will produce over 2 tons per fm. each. The adit end looks much the same as last reported, the lode about 2 ft. wide, with 6 in. mixed with lead. The ends driving south and west from engine-shaft, at the 24 fm. level, have discovered nothing but small branches of the lode. The tribute pitches through the mine look well. We shall ship another cargo of silver-lead ore in 10 days (about 40 tons) should the weather continue favourable.—THOMAS ANGOVE: June 12.

BEDFORD UNITED.—At Wheal Marquis, there has been no lode taken down in the 80 fm. level east. The lode in the 70 fm. level east is 18 in. wide, and worth 10½ per fm.; the stops in the bottom of this level are worth 20½ per fm. There is no alteration in the 58 fm. level east. At Ding Dong, the lode in the 24 fm. level west is 3 ft. wide, producing good stones of tin. At Wheal Tavistock, the lode in the 47 fm. level east and west is 2 ft. wide, mundic, spar, and ore. The lode in the 35 fm. level west is 2 ft. wide, saving work; and in this level east the lode is 18 in. wide, composed of spar, mundic, and ore. The south engine-shaft is now 14 fms. under the surface; the lode is 9 ft. wide, producing good stones of ore. The lode in the adit level is 18 in. wide, composed of spar and mundic, with spots of copper ore in places.—JAMES PHILLIPS: June 16.

CALLINGTON.—Johnson's shaft is 5 fms. below the 112 fm. level, ground favourable for sinking; in the ends, driving north and south at this level, we are opening tribute ground. In the 100 fm. level north the lode has not been taken down; in the south end we have a promising lode; the back will set at a moderate tribute. In the 90 fm. level north the ground we are opening will set at 6s. in the 12; the south end is also driving through good tribute ground; in the winze, sinking below this level, the lode is producing good work. In the 80 fm. level the lode is taken down. At the north mine, the shaftmen are still engaged cutting a whim-plat, dividing and casing the shaft, preparatory to taking out the penthouse. At the 90 fm. level, driving south, we are opening tribute ground. In the 80 fm. level we have a good branch of silver-lead ore; the back will set at a moderate tribute. In the 70 fm. level south the lode is producing silver-lead ore; in the north end the lode is split; we are now cross-cutting to the western branch. The counthouse shaft is 3 fms. below the 60 fm. level.—J. T. PHILLIPS: June 15.

EAST POOL.—To cost for April and May, 1244l. 19s. 8d.—By copper and tin ores, less dues, 977l. 6s.; received for materials and debts, 368l. 10s. 3d.—together, 1345l. 16s. 3d.;—showing profit of 100l. 16s. 7d.; add balance in hand last account, 508l. 7s. 9d.—leaves now in hand, 609l. 4s. 4d.—June 16.

EAST TAMAR CONSOLS.—At Whitson, in the 46 fm. level, south of Hitchins's shaft, the lode is 18 in. wide, good work; at the 46 fm. level, north of ditto, the lode is 20 in. wide, saving work. At the 36 fm. level, north of ditto, the lode is 2 ft. wide, good work. Whitson is still improving. At Fuzehill, in the 30 fm. level, south of the shaft, the lode is 15 in. wide, very good work. We shall not be able to put the engine to work so soon as I expected, by reason of the foundries having deceived us; I expect it will take a day or two longer; I hope she will leave on Thursday next. We are getting on in our dressing department as fast as possible. I expect to sample at the end of the month upwards of 50 tons of lead ore.—B. ROBINS: June 15.

EAST WHEAL ROSE.—The following are the accounts for March & April:

Mar.—To costs this month	£2388 19 8	By balance of last account	£2470 16 2
Surgeon and club	31 6 0	Mar. 6—Lead ore sold this day	3309 8 0
Apr.—Costs this month	2425 10 11	20—Ditto ditto	3627 17 7
Surgeon and club	31 7 3	Apr. 3—Ditto ditto	3977 13 11
Bills these months	1689 13 6	17—Ditto ditto	3895 2 3
Income tax	100 0 0	18—Jack ditto	44 9 1
Coal—two months	200 0 0	24—Lead ditto	836 17 11
Wharfwards of Newlyn	74 6 8		
Dues	1025 3 2	Cargill adventurers for drawing, agency, &c.	94 15 7
Interest on ore bills	97 14 2		
Land tax assessors	32 15 11		
Dividend of 500l. per share	6400 0 0		
On acc. of steam-engine	930 0 0		
Balance	2830 8 3		
Total	£18237 5 6	Total	£18237 5 6
Balance	£2830 8s. 3d.		

GUNNIS LAKE.—At Chilworth, Bailey's engine-shaft is now 8 fms. 3 ft. 6 in. under the adit level; there has been no lode taken down. The lode in the 10 fm. level, east and west of western shaft, during the past week, produced some tin of excellent quality; it is now about 2 ft. wide, composed of prian, peach, and spar.—W. RICHARDS: June 16.

HAWKMOOR.—I beg to inform you, that the lode in the 15 fm. level, east of Hitchins's shaft, is about 3 feet wide, producing good stones of ore.—P. RICHARDS: June 16.

HARROWBARROW OLD MINE.—The engine-shaft is down 5 fms. under the 33 fm. level; the shaftmen are now engaged in changing the drawing lifts to a plunger; when this is completed, they will sink and cut the two lodes at the junction, which, I understand, can be done in six or eight weeks. We are getting on rapidly on the tin lode; the shaft is down 28 fms., and only 14 more to sink to hole to the deep adit, where the lode is full 4 ft. wide, and valued at 20½ per fm.; when this shaft is completed, they will have upwards of 20 fms. of ore backs, which can be taken away without the cost of an engine; and as all the backs for hundreds of fathoms in length, and as deep as the shallow adit, which is 16 fms., have been taken away, we may reasonably calculate that we have a fortune above the deep adit, which said deep adit cost a fortune to drive home, it being more than a mile long.—B. COOKE: June 16.

HARROWBARROW CONSOLS.—There is but little doing, more than sinking Brewer shaft, which is now better than 35 fms. deep, and about 8 under the deep adit; the water in the said shaft is but very little, and the little that is there, appears to be coming from the bottom of an old level driven by the former adventurers; the said old level is about 2 fms. under the present deep adit, and if this water is taken up, as the pitmen told me they intend to do, the bottom of the shaft would be quite dry. The lode in the shaft is about 2½ ft. wide, composed of soft sugary spar, mundic, carbonate of iron, spotted with ore—a very pretty looking lode, but not rich.—June 15.

HOLMBUSH.—I beg to inform you, the shaftmen are still engaged in stopping ground for the back of the flats. In the 120 fm. level, west of Hitchins's shaft, we have driven 3 ft. in the great cross-course, and have drained the bottom of the 110 fm. level (east of the same); there is a great deal of water issuing from it, but we are able to keep it in fork with our present power—viz.: a 10 in. and 8 in. lift—unless it should greatly increase. In the 110 fm. level west of Hitchins's shaft, the lode is 14 in. wide, and worth 12½ per fm. In the 100 fm. ditto, west of ditto (on the north part), the lode is 12 in. wide, composed of mundic, spar, and stones of ore; in the 100 fm. level, west of lead lode (on south part), the lode is 10 in. wide, composed of spar, mundic, and copper ores; at this level, driving south, the lead lode is 4 ft. wide, composed of soft spar, prian, and lead, producing from 2 to 3 cwt. of lead per fm. (being very banchy), the ground is still favourable for driving; in the same level, driving north, the lead lode is 2 ft. wide, composed of floukan and spar. In the 90 fm. level of the lead lode (on the north part), the lode is 10 in. wide, producing stones of ore. The rise in the back of the 80 fm. level, against Bray's shaft, is still hard. In the 62 fm. level south the lead lode is 2 ft. wide, composed of floukan and spar, with spots of lead.—W. LEAN: June 16.

LANIVET CONSOLS.—The casing, dividing, &c., is completed in Elizabeth shaft, and the cross-cut commences to intersect the lode at the 80 fm. level, which we hope to accomplish in about six weeks. The lode on the south part, at the 70 fm. level east, is about 3 ft. wide, very promising on the north part; the lode is about 2½ ft. wide, ore throughout; in the 70 west the lode is about 1½ ft. wide, producing a little ore. There has been no other end driving since last report, but shall resume driving the 60, 50, and 40 fm. levels shortly, having holed the whim-shaft with a barrier hole, and hope to cut it down to the 40 against the middle of next week.

LLANCYFELIN.—In the engine-shaft the ground is still favourable, and sinking about 5 ft. a week. The lode in the 18 fm. level east is improved, it is from 1 ft. to 1½ ft. big, with good spots of ore; in the winze, in the bottom of the 18 fm. level, the lode continues hard, composed of lead, spar, jack, and mundic, about 18 in. large. The east stopes, in the 8 fm. level, is worth from 25l. to 30l. per fm.; west stopes, at the same level, from 20l. to 25l. per fm. In the new winze, at the adit, the lode is 15 in. big, and of a very promising character. At the north adit we have drove and cut one of the middle lodes; but the ground being so shallow, we cannot ascertain the exact underlie. We are also clearing the south level at the adit, in order to cut the lodes to the south of the main lode. The new engine-house is built 1 ft. above the cylinder bed, and the masons are getting on very well.—J. TWEED: June 12.

NORTH WHEAL CAMEL LEAD MINE.—This mine is bounded by the River Camel, and is, according to information, about 600 fms. square; the stratum is killas, but the granite is only a short distance from it. The greater part of the set is on rising ground, which begins from the river. The operations in this mine have been chiefly confined to the driving an adit into the hill, on a lode from 2 to 4 ft. wide; the lode is composed of gossan, floukan, can, and good stones of lead ore, containing a portion of silver, which, according to information, is 35 ozs. in the ton of ore. The hill, at this point, rises very fast; and, by continuing the adit, it will soon have 20 fms. back, and ultimately 30 fms. or more; and as lead ores are known to make shallow, there is a good chance here without going below the adit. The adit can be carried into the hill for a small outlay, which may make a valuable discovery. I did not see any other lodes in the set worth notice; but, doubtless, there will be other lodes found when the set is properly explored.—H. WILLIAMS: June 12.

MENDIP HILLS.—In Stainby's shaft we are at present sinking through a very large hollow, lode is sunk 5 fms. below the 18 fm. level; in the end, driving south, at this level, the lode is 3 ft. big, composed of floukan, intermixed with lead, presenting promising appearances; driving north, the lode is 4 ft. wide. In Paynter's shaft the lode is small and unproductive. The 14 fm. level, north of this shaft, is suspended driving. The lode in the 20 fm. level, north of Somer's shaft, is much improved; we have taken several good stones of lead from this during the past week. The 20 fm. cross-cut new shaft continues hard for driving.—F. HARPUR.

SILVER VALLEY.—The lode in the engine-shaft sinking below the 30 fm. level is about 2 feet wide, producing a little tin. At the 80 east the lode is somewhat improved in appearance, but it is still unproductive; the western end continues to produce good saving work. No alteration has taken place in the winze sinking below this level. The lode in the 20 fm. level west is 3½ ft. wide, presenting a promising appearance, and producing a little tin; we have let one pitch on tribute in the back of the 20, and another in that of the 30,—and we do hope the tributaries will earn good wages, that others may follow their example in exploring more ground in the other parts of the mine, which will no doubt pay for taking away. At the silver mine the lode in the 40 east presents some indications of silver, and the ground is rather more favourable for driving. We have suspended clearing the western level, in which we do not find any traces of silver. The 30 west is being cleared through a part of the lode, in which is found carbonate of iron, with a soft clay, containing spots of galena, rich in silver. We have removed the men from the stopes in the eastern end of this level to a more promising piece of ground, which we have this day discovered in the 20 fm. level. At Wheal Sisters the men are clearing and securing the level as fast as possible; we have no idea how far it is extended east, not having been able to gain any information respecting it; but we are in daily expectation of reaching the end.—J. PRINCE: June 15.

TAVY CONSOLS.—At Hocklake shaft, we are down about 17 fms. from surface, and about 14 from adit; at this point we commenced driving our 12 fm. level, leaving about 2 fms. as reservoir or fork; the lode is about 4 ft. wide, composed of spar, mundic, and peach, with a little branch of black and yellow ore in the north part of the lode. The whim is fixed and ready to work, by which we shall draw the stuff instead of by manual labour, as we have been doing. The adit end is into a cross-course, which has hove the lode; the lode up to the cross-course is a large and strong sparry lode, spotted with copper; this cross-course accounts for the dryness of the shaft, it acting as a dam against the water from the high ground. We have got the grant of the use of the River Tavy, to be taken up just below the Virtuous Lady Mine, and be brought home through an old water-course, formerly used as a lead to the dressing-floors at Little Duke deep adit; this lead can be brought near the mine, and will work a wheel, equal to the power of an 80-in. cylinder steam-engine, if required. At Little Duke, the tributaries are working on, and I think getting wages. We are preparing to clear up the deep shaft under the adit, and shodding over the western part of the set.—B. COOKE: June 15.

TRELEIGH CONSOLS.—At the 100, east of Christie, the lode is about 2 ft. wide, rather improved from last week, producing good stones of ore. At the 100, west of ditto, driving on the cross-course. At the 90, east of ditto, the lode is about 2½ ft. wide, and worth about 8½ per fm. At the 90, west of ditto, the lode is 2½ ft. wide, with stones of ore. At the 90, east and west of Garden's lode, each of those ends is 3½ ft. wide, and worth about 30l. per fm. each. At the 80, west of Good Fortune, the lode is 2½ ft. wide, but very little ore. At the 70, west of ditto, lode 3 ft. wide, producing good stones of ore—much as last week. At the 60, west of Symons's, the lode is 2 ft. wide, but little mineral. At the 50 cross-cut north, the ground much the same as last reported. At the winze below the 50 west, the lode is 2 ft. wide, and worth 7½ per fm. At the 50, west of ditto, the lode is 3½ ft. wide, and worth 8½ per fm. At the adit, west of ditto, the lode is 3½ ft. wide, ore, and a kindly lode. At the west shaft, on Good Fortune lode, the water is about gone, and we intend trying to sink, if possible—this is in the country. I beg to state, that, in the 70, west of Good Fortune, the lode is very promising to improve—more so than it has for a long time, and hope ere long to state such on the report.—W. SYMONS: June 15.

UNITED HILLS.—In the 90, east of Williams's shaft, the lode is 2½ ft. wide, worth 25l. per fm.; in the 90, west of ditto, the lode is 3 ft. wide, worth 28l. per fm. In the 80, east of ditto, the lode is 4 ft. wide, worth 10l. per fm.; the rise, in the back of the 80, west of ditto, is rising to the north of the lode, against the diagonal shaft. In the 70, east of eastern shaft, the lode is 18 in. wide, poor; in the 70, west of James's shaft, the lode is 2 ft. wide, coarse in quality; the diagonal shaft, under the 70, is sinking to the north of the lode. The 60, east of eastern shaft, is rising—the lode is 2½ ft. wide, worth 15l. per fm.; in the 60, west of Harper's winze, the lode is 3½ ft. wide, worth 12l. per fm. In the 50 cross-cut south, the ground is a little more favourable for driving. At Wheal Charles, in the 50, east of Gibson's shaft, the lode is 2½ ft. wide, with stones of ore. In the 40, east of ditto, the lode is 2½ ft. wide, worth 12l. per fm. At Wheal Sparrow, in the 40, west of Richards's shaft, the lode is 18 in. wide, worth 4l. per fm. In the 30, west of ditto, the lode is 20 in. wide, worth 8l. per fm.—T. TREVENEN; R. WILLIAMS: June 12.

VENTONGIMPS.—We are down below the adit level, in Hay's engine-shaft, about 20 ft.—the water is so far to be managed with the horse-engine; the ground, however, is spare for breaking, being a tough killas—the price we have given is not sufficient for the men to earn fair wages. The engine-house walls we expect will be completed in about 10 days; the engine we shall commence to take abroad and remove next Monday, and as well prepare to begin building the stock and boiler-house. The little account-house walls will be up by end of present week; the timber-house is taken from Cornubian and fixed here.—RICHARD ROWE: June 15.

WEST WHEAL JEWEL.—The 115 fm. level east, on Wheal Jewel lode, is 18 in. wide—unproductive. At the 100 fm. level west, on ditto, the lode is 1 ft. wide, producing occasional stones of copper. At the 85 fm. level west, on ditto, the lode is worth 4l. per fm. At the winze sinking below this level, east of the little cross-course, the lode is worth 8l. per fm.—ground very favourable for sinking. At the 12 fm. level west, on Tolcarne tin lode, the lode is 2 ft. wide—unproductive. At the 12 fm. level east, on ditto, the lode is worth 8l. per fm.—S. LEAN; R. JOHNS: June 15.

WHEAL AGNES.—The men in the shaft have sunk about 5 fms., I have put them to cut through the slide, which I hope will be done in a day or two. The ground in the adit level is very favourable for driving. The dressing-floors will be ready to commence dressing the latter part of this week.—B. ROBINS.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINES.—In extending the shallow level, eastward from Bray's shaft, the vein continues to afford good samples of gold, although, perhaps, scarcely so rich as it did a few days since; such of the backs also, as we are able to work without inconvenience, yield a few "hat caps" of work occasionally. A cross-cut, at the 14 fm. level, from Harris's shaft, is in progress, and will soon enable us to open this ground advantageously, when I have little doubt but more gold will be found—how much more, however, trial alone can show us. We continue to extend the cross-cut northward, near the Eliza stamps, and both northward and southward of the 70 fm. level at Vesey's shaft; but, I lament to say, without improvement in either of them. We have stamped about 50 tons of the hard calcareous ferruginous formation, discovered in the cross-cut north of Lyons's shaft, at the 48 fm. level; the produce of gold from it was scarcely more than one-third of it was auriferous; the produce of gold from it was 19 dwts., or about 1 dwt. per ton of the auriferous part—a small produce certainly; but when we consider, that it is from a formation of the better part is some fms. wide, and has never before been noticed, as well as that, though hard, it will scarcely be more expensive to work than our jacotinga formation is, it will comparatively require scarcely any timber for supporting the workings. I am sure you will concur with the captains and myself, that so inviting a prospect deserves much further trial. The gold is rather brighter than that from the jacotinga, and, as most of it occurs in rough large particles, we should think it a remarkable circumstance if we had, in the first instance, intersected it in the richest part, and that too in a portion of the mine where the parallel formations had been so productive. We are opening a cross-cut towards it, at the 27 fm. level, from Lyons's shaft; and another, at the 41 fm. level, from Curtis's shaft, will also be extended towards it. Our trial near Taboleiro has proved unpromising, and has been suspended. At Catta Preta the cross-cut from Thomas's shaft, towards the lode, at the 18 fm. level, is in progress. At Fitzpatrick's we are preparing a (I fear, final) trial of a new method of penetrating the soft ground at the 20 fm. level.—W. J. HENWOOD.—Gold Workings.—From April 3 to 11, 5 lbs. 2 ozs. 16 dwts.

NATIONAL BRAZILIAN.—Cocais, April 13.—You will, doubtless, have perceived from our correspondence that, since we commenced operations at the Serra Velho, we have been gradually increasing our negro force by hire, as we were loath to interfere with the hands at Caiabá, being fully aware of your anxiety for the works there being carried on, on an extensive scale; but, being satisfied of the importance of the discovery, and of the certainty of the additional people being profitably employed, determined us at all risks to do so. A splendid water course is now completed, tram-road being laid down, and will be advanced to Waller's cross-cut before the ensuing post; the lode is rising is very favourable, and of its quality there can be but one opinion, as it has been sampled at Waller's cross-cut and the Bandeira level, and scarcely any difference met with—the extent is enormous. Taking these things into consideration, and being desirous of sending remittances with the least possible delay, we have given directions for stopping the new wheel at Caiabá for the present, and ordered Samuel Woolcock to assist in putting up another stamp. During the time we are putting in the tram-road, it is impossible to bring stone out of the mine; I hope, however, you will have patience a few days longer, until the tram cart is put to work.

ST. JOHN DEL REY MINES.—Morro Velho, April 8.—Produce for March, 13,487 cts.; plus from Cata Branca, 163 cts. from washings of covers—18,480 cts.—29,967 lbs. (44,000 tons) of ore—4,489 cts. per ton. It appears that, during this month, the United Mines have yielded by actual stamping 4,989 cts. per ton. The produce is relatively a very good one, a very large quantity of ore has been stamped; but the rate per ton does not come up to what I expect from picked ore. The cost for March was rs. 31,808 \$698. The cost of timber, you will observe, has been very heavy this month, rs. 1806 \$780; but, as I have already said, it is one of those things which we must take when it offers. The close of Montevideo's account of stamp heads also comes in for rs. 616 \$552, which we could very well have dispensed with. Mr. Harding's account for the making of tools, &c., which turned out very bad indeed, comes in for rs. 1346 \$670. Milho has increased in price very much since the middle of February, about 25 per cent. The transfer duty on the Cata Branca estate and Taboleiro's, \$380, also add to the cost.

[FROM CORRESPONDENTS.]

BACHELORS' HALL MINE (near Prince's Town).—This once rich mine has for several years been idle, owing principally to a misunderstanding with the then lord or owner of Tor Royal—the land in which it is situated—and the then owner of the mine, some year or two before the expiration of the lease or grant, in consequence of which the water was left in the mine, and when the term had expired, the lord thought to fork the water, and draw up the materials, but he found it was a work that could not be easily done; consequently, they cut off the main rod at the level of the bottom of the bob plat, which said main rod and lift of pumps is now in the shaft. A short time since, a grant of the mine was taken from the Duchy of Cornwall, for a term of 21 years, and at 1-20th dues; since which time they have formed a company, and opened the deep adit from the tail to end, and made the same 7 ft. high, and 34 ft. wide, about 60 fms., and they are now driving at 24 10s. per fm., and have about 120 fms. to drive on the course of the lode, to unwater the old mine 12 fms. under her present bottom, and, when completed, will open a great quantity of tin ground. There is now a lode in the adit end about 22 ft. wide, producing some very good tin stuff. The tin from this mine always fetched as high, if not the highest, price of any on the moor.

HEWAS CONSOLS (situate in St. Stephens, St. Ewe, St. Creed, and St. Mewan, near St. Austell).—This concern consists of several mines, now about to be consolidated—viz.: Great Hewas, Wheel Prosper, Wheel Husband, and Wheel Elizabeth. These mines are known to contain several principal tin and copper lodes, likewise three counter lodes, and a number of branches or veins of tin, leading from one lode to another. These lodes and branches have been worked above the adit level to a great length, and produced immense quantities of tin. Only one of these lodes has been worked under the adit to any extent, although these mines have been working from time immemorial. The Great Hewas Company commenced working these mines in the year 1815, and found the depth to be 60 fms. below the adit; and with the power of a 50-inch cylinder steam-engine, sunk the engine-shaft to the 126 fm. level. The workings were only a few fathoms in length, to that depth—the mine was very productive, and yielded considerable quantities of the best mine tin. This continued until the London directors sent to stop sinking the engine and other shafts, driving the bottom and other levels, and also to stop all tribute pitches that were above 7s. in the 11. As soon as this became known, one half of the labourers left; this sudden and unexpected change in the manner of working stopped the Great Hewas Mines in the year 1822—such a mode of management in the working of mines is utterly injurious, and would tend to the destruction of any, or in fact every, tin mine in this county, even now. It may be stated, that there are side lodes, north and south, within a few fathoms of the engine and other shafts; and as these lodes are parallel with the one worked, and the same cautions, branches, and veins of tin run through and intersect them, and are standing in whole ground, from the adit to the 126 fm. level, there is no doubt but that they will prove very productive, and can be worked with little expense, from Hewas Consols engine and other shafts. Mine agents, and miners who were acquainted with the workings of these mines, were astonished to think how the Hewas Company neglected driving cross-cuts or levels to these lodes, as it is fully anticipated that great benefit would have resulted therefrom. One recommendation to the future working of these mines is, that since they have ceased to work by steam-power, other companies have worked the eastern part, and cut one of these side lodes, which was found to be very productive, and was followed so deep as they could go without steam-power, leaving a good course of tin ground holding down for a great length. The western part has been working for upwards of 20 years, with considerable profit to the company; but for want of steam-power, they were not able to work the course of tin which was discovered, leaving excellent tin ground running down for a considerable number of fathoms in length. The tin ground discovered, east and west of the engine-shaft, since the mine has ceased to work by steam-power, is very encouraging; and little or no doubt may be entertained, that as soon as forking the mine commences, great quantities of the best mine tin will be raised. These new and promising discoveries, together with the price of tin, the moderate dues (being obtained for 1-30th dish), the present price of labour, the very great improvement in stamping and dressing tin ores, and the astonishing advantages resulting from the application of acids on the tin, have induced the present party to come forward, and strongly recommend the re-working of Hewas Consols.

RYALTON MINE.—This sett is 200 fms. in length, on the course of the lode. The lode in the shaft is 3½ ft. wide, carrying a very fine floukan in the middle of it, 6 in. wide, with yellow mudic. The shaft is down 6 fms. from surface. The value of this mine will be governed, in a great measure, by the result of the operations at Trewallack, being on a continuation of the same lode. Ryallton shaft is about 110 fms. north of Trewallack workings, and is commenced sinking about 10 or 12 fms. north of Trewallack north boundary.

TREWALLACK MINE.—This sett is about 350 fms. in length, on the course of the lode. The adit at the engine-shaft is about 5 fms. deep; this adit is extended on the course of the lode 130 fms.; the lode is from 1½ ft. to 2 ft. wide, composed of gossan, priam, and quartz, with good spots of lead. The 12 fm. level is opened on the course of the lode about 35 fms., averaging about 2 ft. wide; the lode at this level is not looking so well by far as in the adit, though in places spotted with lead, but with very little gossan, and the quartz of a harder, drier nature. At the 20 fm. level, the lode in the north end is 20 in. wide, composed of priam, quartz, with stones of lead; and in the south end of this level the lode is 3½ ft. wide, very kindly indeed, quite of a different character to what it was at the 12 fm. level; the lode is very easy to break, now driving at 20s. per fm., with excellent stones of lead. Should the lode improve from the 20 to the 30, as it has from the 12 to the 20, I am of opinion you will have a lasting and profitable mine. The two eastern lodes I could not see, but Capt. Nimis informed me the first is about 10 fms. east of the main lode, and the second about 5 fms. further east. It is intended to commence driving a cross-cut east, to intersect these lodes at the adit level, which I think very advisable. The engine-shaft is now 8 fathoms below the 20 fm. level—present price 54 10s. per fathoms.—B. O.

WHEAL WILLIAMS.—The north lode recently discovered, which runs through the whole of the sett from east to west, has been sunk on about 1 fm., it is from 5 ft. to 6 ft. wide, producing large and beautiful stones of yellow and grey ore, with a fine spar and priam in the soft part of the lode, and yellow ore, mudic, and capel in the hard part. It is all but a course of ore, and the men working on it declared that they could make excellent wages, if they could be allowed 4s. in the 11. Garland's lode has been traced a considerable way west from the place where it is seen in the river, and fine stones of ore were broken there on Monday. To the south of this lode another large lode has been cut, running east and west throughout the sett, consisting of a mass of gossan 7 or 8 ft. wide, and resting in all respects the gossan on the back of Wheal Maria lode, as the ore in the north lode resembles the ore now being raised in that mine. In this opinion Captain Evans, of St. Agnes, Captain Cocking, of Latchley, Captain Barrett, of Tavistock, and Captain Hambley, who examined the mine on Monday, unanimously concurred.

IN WHEAL ROSE CONSOLS, on which an engine has been just put to work, a very fine lode has been cut in the shaft, containing a lender of lead, which was quite unexpected, running nearly parallel with the two other north and south lodes, to try which was the principal object in view—thus establishing the fact of there being three north and south lodes very near to each other, which arrangement of lodes exists in East Wheal Rose, to the north of which, in the same valley, this mine is situated.

WHEAL CAMEL is situate in the parish of Michaelstow, in the county of Cornwall. The sett is bounded on the north-east by the River Camel (which passes through part of the sett); its length is about 800 fms., and breadth 700 fms.; the stratum is killas, the granite being about a quarter of a mile distant, and Great Wheal Mitchell half a mile. The greater part of the sett is on an acclivity, rising, from commencement to summit, about 30 fms. Three lodes have already been discovered parallel to each other, and distant from north to south about 80 fms. The first, or nearest to the bottom, is about 2 feet wide, composed of gossan, capel, and good spots of fine yellow ore, and underlies about 3 ft. in a fm.—its longitudinal direction being 17° north of east. This lode has been opened on at two different places—10 fms. apart—and presents the same appearance. Further north still is another lode (and distant about 40 fms.), underlaying but a trifle, nearly perpendicular; the longitudinal direction of this lode is 15° south of east, and has been opened on at different places in eastern pits, and a shaft has been sunk about 5 fms. Throughout the operations the lode remains much the same, being composed of gossan, of a promising character; very large and kindly rocks of gossan have been taken up from it, and are now to be seen on the surface. The stratum adjoining this lode, on either side, is soft and kindly. An adit can be taken up in the bottom, which will intersect these lodes, already spoken of, with every probability of cutting more lodes in continuing the adit into the hill. The River Camel can be made available to drive ore, and also to work a wheel, to crush or stamp. From the present appearance of the lodes already discovered, and copper ore having been

found in them, there is every reason to believe them to be copper lodes, and not unkindly. The one last spoken of presents such an appearance as is scarcely to be found. The sett is held under the Duchy, at 1-15th dish, or dues.

COLOMBIAN MINING ASSOCIATION.

The 21st general annual meeting of the proprietors was held at the offices, Austinfrs., on Thursday, the 18th inst.,

J. D. POWLES, Esq., in the chair.

Mr. JONES (the secretary) read the notice convening the meeting, when the CHAIRMAN proceeded to read the following

REPORT.

The directors have now to lay before the proprietors a statement of the company's proceedings during the past year. The following is a statement of the amount of gold extracted during the year ending the 28th February last:—

1845—March	lb 25 10 9	1845—October	lb 36 6 15
April	33 9 15	November	40 9 13
May	34 10 18	December	39 10 3
June	29 7 7	1846—January	26 5 4
July	28 5 15	February (estimated) ..	30 0 0
August	17 1 8		
September	19 5 13		
		Fine gold	lb 362 11 2

The amount extracted in the year 1844-5 was 487 lbs 1 oz. 16 dwts. The quantity of ore raised has been less than in the preceding year, and it has given a smaller amount of produce of gold per ton. The result has been, that the costs have exceeded the returns by the sum of 35277 4s. 8d. But in these costs are included the expense of sending out Mr. Hopkins, with the mechanics and machinery necessary for putting up his process for dressing the ore, the erecting a new stamping-mill in connexion therewith, and other expenses relating thereto, which amount, in the whole, to fully the above sum; so that the returns from the mines have about covered the expense of working them.

Mr. Degenhardt, who, as was stated in the last report, had left England on his return to Marmato, as principal mine agent, arrived there in October last. He immediately set about an examination of the several workings in the mines, of which he has given a very full account in the reports which will be found in the appendix. From these it will be seen that Mr. Degenhardt finds ore-ground available to the extent of supplying 32,348 tons, and that he entertains no doubt of restoring, within a reasonable time, a full supply of ore for the stamping mills. The proprietors are aware, that, in order to diminish the loss sustained in the extraction of the gold from the ore, amounting to 50 per cent., the directors had dispatched Mr. Hopkins to Marmato, there to erect and apply a dressing machine which he had invented in England, calculated to effect a complete separation of the precious metals from the ore in which they are contained, and, by consequence, to realise a very much larger proportion of its contents. Mr. Hopkins has, since his arrival at Marmato, been engaged in a series of experiments on the ore with his machinery, and he has now completed the erection of a machine on a large scale, together with a new stamping mill of 12-heads, placed at the Calibio site, where there is deposited an accumulation of several thousands tons of "remains" from the ore which has been stamped. The mill will be employed in the re-stamping these remains, after which they will be passed through Mr. Hopkins's machine, and the result will be ascertained, by comparing the amount of produce which may be obtained by that process with that previously in use. The following are extracts from the latest advices which the directors have received on this very interesting subject.

The following letter from the superintendent, is dated Marmato, March 4:—"Mr. Mountain assures me positively he will finish the new mill and machine within a fortnight. One of the carpenters is already withdrawn from it, and there is little more than smith's work for the axle, and the bands and tongues for the lifters to be done to finish the whole. The machine consists of 16 plates on a horizontal frame, and it differs from the former machine in the plates being made one-half longer, and the fall from one plate to another being lessened by using a horizontal, instead of, as before, an oblique frame. If this process of concentration is effected without manual labour, the machine is an improvement upon the present system of concentrating by the stamp pits, and will save the expense of taking up the mineral from the pits and conveying it to the tyes, and tying by manual labour. With a view of testing the relative merits of the different modes of dressing, I have ordered a trial to be made upon 300 tons of 'remains' each, by Mr. Hopkins's, the Cornish, and the German modes of dressing; these experiments will occupy the month of April, and will be conducted under the direction of a committee of officers, who will report thereon; this will determine which is the best system for treating, as well as the value of the 'remains,' &c."

The following letter from Mr. Hopkins, is dated Marmato, March 23:—"I am happy to say the new mill is at length completed, and will be put to work this week. It is the best mill ever put up on this establishment. The aqua, site, house, mill, and separator, have each, in consequence of delays and indifferent hands, cost somewhat higher, but I am glad it is finished, and there is every chance of its doing well."

The next mail from New Granada will probably bring advices of a conclusive character on this very important subject. It is proper to remark, that, in the possible event of Mr. Hopkins's process not proving successful in improving the extraction of the precious metals, the new and costly mill erected at the Calibio site will still be available to the re-stamping the "remains" there, and will amply repay the expense of its erection. The accumulation of the mineral remains there is so large, that it would have been expedient to have put up a stamping-mill on that spot, even if no such improvement in the dressing process had been in contemplation. If Mr. Hopkins's process shall effect what he continues confidently to expect it will do—that is, the complete separation of the precious metals from the ore, so that the company may realise the actual contents of the ore, or a much larger proportion thereof than it is now doing, the company may be considered from that time as working at a profit. The company would in the last year have realised a profit of many thousands of pounds, if the whole of the gold which the ore is known by assay to contain had been extracted. And the same would have been the case for many years past. In short, dividends would have been paid to the proprietors long since, if this vitally important object could have been accomplished. It is a matter of so much interest to the proprietors, that the directors will, as soon as they shall receive any decisive intelligence thereupon, address a circular to the proprietors, informing them of the result of Mr. Hopkins's proceedings.

Annexed will be found the usual statement of receipts and disbursements, and the balance-sheet.

Statement of Receipts and Disbursements, from 2d June, 1845, to 30th May, 1846.

Balance, per last statement	£285 12 10
Dividends on 4000l. 3 per Cent. Consols	116 10 0
Fees on transfers	2 5 0
Loans	1709 16 9
Total receipts	£2684 4 7

Mine materials and stores	£354 19 9
For account of the foreign establishment and mines	50 7 11—405 7 8
Interest on loans	326 14 0
Insurances	12 15 3
Salaries and wages paid in England for account of the foreign establishment	428 8 11
Salaries of secretary, clerk, rent, stationery, postage, and incidental expenses	490 12 4
Passage money & expenses sending Mr. Degenhardt & others, per Clyde, &c.	316 13 7
Cash in the office	£ 5 15 4
Cash at the bankers	696 7 6—702 2 10
Total disbursements	£2684 4 7

Profit and Loss, 1st June, 1846.	
Dr.—June 2, 1845—To balance brought forward	£1544 5 9
May 30, 1846—Charges of management	1190 12 4
Interest	326 14 0
Balance	£3061 12 1

Dr.—May 30, 1846—By dividend on Consols	£ 116 10 0
Transfer fees	2 5 0
Balance	2942 17 1
Balance	£3061 12 1

Balance-Sheet, 1st June, 1846.	
Dr.—Mines in Colombia	£486,769 4 8
Agents in Bogota	860 17 11
Superintendent of the Supla establishment	516 12 0
Supla Mines	3527 4 3
Pamplona Mines	2223 11 1
Parting Office, 2359l. 11s. 8d.; bullion in New Granada, 1819l. 3s. 4d.	4278 15 0
3 per Cent. Consols	4000 0 0
Specie from New Granada, 512 13s. 9d.; general stores, 1953l. 9s. 5d.	2005 3 2
New Granada Mining Company	1118 10 7
Office furniture, 1294l. 14s. 3d.; expedition, per Clyde, &c., 459l. 8s. 3d.	289 2 7
Profit and loss	2942 17 1
Cash in the office, 5l. 15s. 4d.; at the bankers, 626l. 7s. 6d.	702 2 10
Total	£509,433 19 2

Cr.—Capital stock	£495,900 0 0
Loans	8394 15 3
The directors	5342 15 6
The estate of the late William Luke	196 8 2
Total	£509,433 19 2

The CHAIRMAN expressed his readiness to give any further information in his power, which the proprietors might require; at the same time, he regretted that the report was not more favourable.

In reply to the inquiries of several proprietors as to the prospects of the concern, the CHAIRMAN stated, that a great deal depended on the result of the experiments about to be tried with Mr. Hopkins's machine; in order to test which, on a large scale, 300 tons of "remains" were to be tried by the three processes—Mr. Hopkins's, the Cornish, and the German, modes of dressing—which would take place in the course of the month of

April; consequently, the next accounts from the mines might be expected to bring the results. Mr. Hopkins was still very sanguine of the success of his invention; at the same time, should it prove a failure, the erection of the mill would be still requisite—indeed, they could not without it reduce the immense accumulation of "remains" at the Calibio site, which amounted to from 10,000 to 15,000 tons, and would fully repay the expenses already incurred—and, he considered, would leave a profit; as, however, the subject was of such vital importance, the directors would forward a circular to the shareholders, as soon as they were acquainted with the result of the experiments.

The three directors—Mr. Macdonnell, Mr. Ald. Thompson, and Mr. Wilson—going out by rotation, were unanimously re-elected, as were also the auditors, Mr. Ewbank and Mr. T. O. Powles—when the meeting separated.

UNITED HILLS MINING COMPANY.

The annual general meeting of proprietors was held on Thursday, the 18th inst., at the offices of the company, pursuant to advertisement. The meeting was attended by few proprietors, although, we believe, a large interest was represented.

W. CLARKE, Esq., in the chair.

The CHAIRMAN, in opening the proceedings of the day, observed that the report prepared by their agent would best convey their present position, and the prospects which the mine afforded; while it was with regret he was called upon to state that, owing to his want of health, he had been precluded from the pleasure he should otherwise have derived, as also from the satisfaction he should have felt in acquiring information by presence, instead of gathering it through the medium of others. His worthy co-director, Mr. Tyas, had, however, kindly visited the mine, and minutely inspected the accounts; that gentleman was accompanied by Mr. Campbell, to whom his thanks were especially due—that gentleman having kindly undertaken the office, which it would have afforded him so much pleasure to execute, had his health permitted him. It would be found by the report, that there were certain debts which had been incurred; but the directors, sanguine, as they were, of profitable results attending their workings, and looking out, as they did, daily for accounts of a more cheering character, had, on their own responsibility, postponed any call on the shareholders, even should such be in the end necessary. It was right to observe, that the directors, in pursuing such course, had been mainly influenced by the state of the mine, and the promise it at one time held out. While a heavy cost had been incurred in sinking the engine-shaft—while but little advance had been made, the present cost of sinking was 60l. per fm., and at that price not more than 38 inches, or little more than half a fathom, could be sunk in a month—in fact, a mere trifle over one inch per diem. He (the chairman) begged to refer to his friend, Mr. Campbell, as also to Mr. Tyas, his co-director, who would, he felt assured, be happy to convey to the proprietors the result of their inquiries and observations. He, in common with others, regretted that a domestic calamity precluded the proprietors from having the advantage and pleasure, which they all would otherwise feel, from the presence of Mr. M. Williams, one of their directors.

DIRECTORS' REPORT.

The directors cannot do better than refer the proprietors to the report of the mine captains, and mine agents, as to the present state and future prospect of the mines, which present an encouraging appearance. The past year has been one of great anxiety to the directors, and caused them much disappointment, inasmuch as they had fully calculated on having to report to the annual meeting, the realisation of a profit. Many causes have contributed to this disappointment. The ground in sinking to the 90 fm. level, turned out exceedingly hard, inasmuch as to entail a cost of 60l. a fm.; whilst, instead of being reached months ago, as was expected, and contributing from that period to the profit of the mines, that level has only just been reached, and we are driving upon the lode east and west, with most favourable indications of a good run of ore, which may reasonably be reckoned upon to a considerable extent. At the 70 fm. level, a branch had been driven upon, instead of the main lode, which has had to be reached by cross-cuttings. It was also thought prudent, from motives of economy, to suspend the workings at some of the levels; and the outlay in developing the resources of Wheal Charles, through that, and Wheal Sparrow workings, has been considerable. Under these circumstances of delay and disappointment, the directors thought it right that the mines should be visited and inspected, with a view to ascertain if the same were worked to an extent compatible with the resources of the company. The state of health of the chairman, Mr. Clarke, preventing his accompanying the other town directors for the purpose, Mr. John Campbell, one of the largest London proprietors, at the request of Mr. Clarke, kindly consented to take his place, and he gratuitously accompanied the director, Mr. Tyas, into Cornwall. They together visited the mines, and had also the benefit of the assistance of Mr. Michael Williams, the director resident in Cornwall, and they are all fully of opinion that the mines are worked with zeal and ability, and that nothing further could be done beyond pursuing the workings then in progress, and which, in the course of a few months, there are reasons confidently to anticipate will be attended with profitable returns to the company. The mines are in a most efficient working state, and the directors see no reason to doubt, but that they will yet fully redeem the outlay upon them. The directors will not, however, conceal from the adventurers, what they must be fully prepared to hear, that the outlay upon the mines for so long a period exceeding the cost, the available resources of the company have been exhausted, and the directors have had the task imposed upon them, of obtaining upon their personal responsibility, and on the credit of the resources of the company, funds for the prosecution of the adventure, which will have to be repaid out of the first future profits of the mines. The directors have pursued this course, in preference to calling the adventurers together for the supply of further capital, which could only be done by the creation of additional shares, from the conviction impressed upon their minds that the time is not far distant when profits will be realised, and the outlay repaid, and, under this belief, they have declined disposing of the 96 shares held by them on behalf of the company. If, however, the directors should be disappointed in the hope they reasonably entertain of a speedy return of profit, and should the costs much longer exceed the profit, it will be their duty to call the adventurers together, and take their opinion as to the course to be pursued. The directors, however, do not anticipate that that duty will be imposed upon them—being of opinion, in accordance with that of the officers and agents of the mine, that difficulties will shortly cease, and the old prosperity of the company return.

MINE AGENTS' REPORT.

We beg to lay before you a statement of our present operations and prospects in these mines. Williams's engine-shaft is sunk to the 90 fm. level, and the said level extended 7 ft. east and west on the north lode, which is from 2 to 2½ ft. wide, and from 1½ to 2 ft. good ore; the south lode at this level has not been seen,—but in driving 2 or 3 fms. farther east, we expect to intersect it. The 80 fm. level east is extended 16 fms. through a lode 4 to 5 ft. wide, and good tribute ground. We have also communicated a winze to the 70 fm. level, which is also good tribute ground, and now working in 6s. 8d. out of 11; this is likely to be a very productive piece of ground. The 80 fm. level west is extended 21 fms.; lode in general poor. We are now sinking the diagonal shaft from the 70, and rising against it from the 80, and expect to communicate in four or five weeks, when more tributaries can be placed in the 80 east. The 70 fm. level is extended 27 fms. east of the eastern shaft, and has been very productive from Williams's to 12 fms. east of the eastern shaft, since which it has been poor; lode in the present end 18 inches wide, but not much mineral, still we anticipate a good level in driving 10 or 12 fms. further east, as we come under a good run of ore ground in the 60. We also beg to observe, that we have gone over a good run of ore ground in the 70, for 40 fms. long, which will set from 4s. to 6s. out of 11. The 70 fm. level is extended west of diagonal shaft 30 fms., through a large lode, but not much mineral; the said level is extended west of James's shaft 15 fms., lode in general poor, but in driving 8 to 10 fms. more we expect to get into ore ground, similar to that in the 60, which has been productive for about 60 fms. long,—and in the present level (now 12 fms. west of Harper's winze) the lode is 3 ft. wide, opening tribute ground. The 60 fm. level east is extended 70 fms. east of the eastern shaft—lode 2 ft. wide, 18 in. good ore; this level has been good for the last 12 fms., and we have resumed the 50 east, which is at present poor. The 50 fm. level cross-cut is driven 55 fms. south, and we expect shortly to intersect to Wheal Charles lode. At Wheal Charles the 50 fm. level is extended 53 fms. east of Gibson's shaft, and is 20 fms. in this sett; lode on an average 2 ft. wide, producing some ore, and we expect an improvement soon; the said level west is driven 34 fms. through a poor lode. The 40 fm. level is extended 96 fms. east of Gibson's shaft, which is 45 fms. in Wheal Charles, and within 14 fms. of Monkton's shaft; this level has been productive for the last 35 fms., and is now working on tribute at 5s., 6s. 8d., and 10s. out of 11. At Wheal Sparrow the 40 fm. level is extended west of Richards's shaft 20 fms., lode 18 in. wide, not much ore. The 30 fm. level is extended west of Richards's shaft 65 fms., lode from 18 to 20 in. wide, and tribute ground for about 20 fms. long; we expect in a few days to hole this level to Turner's shaft, and lay open tribute ground that was so productive, east and west of said shaft, about 18 months since. Having, in the foregoing statement, given you the particulars of what has been done, and the present appearance of the mines, it remains for us to state how we are likely to do in future. For the next two or three months we do not calculate on any particular increase of ore, but when the diagonal shaft is communicated to the 80 fm. level, and these backs put into operation, and also the 90 fm. level extended east and west of the engine-shaft, so as to make these backs also available, we calculate on raising a larger amount of ore, as the quality of the ore in the latter level is very good; and we are also very sanguine as to the 30 and 40 fm. levels west in Wheal Sparrow, and the 40 and 50 east in Wheal Charles. From all these places, which we hope soon to bring into operation, we calculate on an increased quantity of ore, and are long to bring these mines into a profitable state. We beg to observe, that the low standard of copper makes very much against these mines: the ore being generally of low quality, the

tributors are not inclined to work many of the pitches, which at 6 or 10 in the standard higher, would be working, and produce 50 or 60 tons per month of low price ore.—W. RICHARDS. THOMAS TREVENEN. ROBERT WILLIAMS.

The reports having been read, Mr. Tyas stated that, as one of the deputations who had visited the mines, it afforded him much satisfaction to state, that every exertion had been used by the agents, and the strictest economy, so far as he could judge, had been observed. He referred to a report which had been made on the mine, at the instance of one of the proprietors, for his own satisfaction, a copy of which was then before him. He would be happy to read it, if such course might be desired by the gentlemen present. This being expressed, Mr. Tyas proceeded to read the report, which was certainly, as he observed, even more favourable as regards prospective advantages, than that of the agents of the mines; but it must be remembered, that the report was dated some two months back—a slight occurrence that did not appear to have struck the gentleman, in directing attention to it. Mr. Tyas further observed, that the debts or obligations which had been incurred, arose from the additional sets taken, one or more of which was indispensable, as the workings had nearly approached the boundary.—Mr. CAMPBELL, in advertising to his visit to the mines, stated that he had strictly, and most minutely, investigated every matter appertaining thereto, and was highly satisfied.

In reply to a proprietor, the CHAIRMAN stated, that the debts of the company amounted to 1562l.; and upon further inquiry it was elicited, that a sum of 250l., or thereabouts, was due to Mr. Bourdillon, the solicitor—thus making 1800l., which, however, was represented by the value of the machinery. The CHAIRMAN further observed, in noticing the agents' report read, that an improvement in the standard, which was now so seriously depreciated, would enable them to send 60 tons per month to ticketing, beyond their present raisings.—The meeting, as we have observed, being but scantily attended, owing either to the heat of the weather, or the chilliness of the report—so far as effects the question *£ s. d.*—was brought to a termination by a vote of thanks to the chairman, who, in a very lucid manner, explained the several matters pertaining to the working of the mine. Something like an understanding was come to, that the directors would convene a meeting on an early day—say, within six months. We hail this announcement with pleasure, for these annual reports are in every sense that which we feel assured the noble iron duke iron-ically, as applied to copper mines, would designate "a farce."

LANIVET CONSOLS MINING COMPANY.

A general meeting of the shareholders was held at the Mining Offices, No. 8, George-yard, Lombard-street, on the 17th inst., when the accounts for twelve months were received and passed; it appeared from the statement, that the Balance to the debit, at the meeting, on the 18th June, 1845, was £164 9 6
Expenditure, from May, 1845, to April, 1846, inclusive..... £3371 19 2
Sales of copper ore, 1261 tons 6 cwt..... £7567 14 2
Ditto scrap iron 4 10 0—7572 4 2—799 15 0

Total against the company..... £964 4 6
Of the above 799l. 15s., there have been added to the value of the materials and machinery on the mine about 400l.; and the total value of machinery and materials is estimated at 2000l.

Reports from the mines were read, and a conversation having taken place with respect to working the north lode, by means of the large water-wheel, now on the mine, it was determined to proceed forthwith.

Resolutions were also passed, making a call of 10s. per share (the mine being divided in 2048); and also for holding the general meetings every four months—viz. in October, February, and June.—Two of the directors, Mr. A. Bennett and Mr. R. Thomas, having been chosen by lot to retire from the direction, were re-elected, and the meeting then separated.

CONBURNOW MINING COMPANY.—At a meeting of adventurers, held on the 9th inst., the accounts having been submitted, examined, and allowed, a call of 6l. per share was made, to carry on the future operations of the mine.—The accounts showed balance due to pursuer, end of March, 1141l. 12s. 11d.; labour cost for April and May, 642l. 10s. 6d.; merchants' bills, 276l. 15s. 10d.; lords' dues (E. W. W. Pendarves) on sale of April 2 (1-20th), 7l. 1s. 2d.—together, 1968l. 6s. 5d. By ores sold, April 2, 152l. 3s. 8d.; lords' dues remitted by E. W. W. Pendarves at end of 1844, 10l. 1s. 4d.; by call made April 7 of 6l. per share, 768l.—leaving balance due to pursuer at end of May, 1034l. 1s. 5d.

HARROWBARROW OLD MINING COMPANY.—At a meeting of adventurers, held at Bedford-street, Plymouth, on Friday, the 5th inst., it was resolved,—“That a call of 1l. per share be now made, to be paid immediately.”—The following report, from Capt. B. Cooke, was read:—“We have sunk the engine about 5 fms.; the ground is more favourable than it was when we commenced. The 30 fm. level, going west, has been driven 7 fms. 2 ft., the lode therein is about 2 ft. wide, composed of capel, mundie, peach, and spar, with some spots of ore. The eastern end has been driven 10 fms., lode large, rather poor, but kindly. I would also recommend your clearing up the shaft to the west of the road (marked C, or Worth's shaft), as we shall be forth under it in the 30 fm. level by the time we are down with the C shaft, when it will effectually ventilate the mine. At Wheal Brothers silver lode there are two pares of tributaries at work; each pare is raising some good silver ores. There are two small parcels now on the water, one sold at 120l., and the other at 80l. per ton. At Goodluck tin lode we have cleared the shaft on the tin lode 28 fms., which is 10 fms. deeper than we expected to find it; there is now only 14 fms. 3 ft. to sink to hole to the deep adit level. We have also seen a level driven from the present bottom of the shaft (as per plan), and find by that there are two lodes—one a fair flookan, varying from 6 to 14 in. wide. The old men drove in this flookan and cross-cut north to the tin lode; but in the eastern end the two lodes come together—in this level there is a run which we can easily clear, and then drive both east and west. There are 12 fms. backs from the bottom of the shafts; but I would, nevertheless, recommend your sinking the shaft, and hoisting the same down to the deep adit and driving from thence, where there is known to be a good lode.”—The statement of accounts showed the amount received for calls as 631l.; by cheques, 121l.—752l. By balance at last account, 6l. 2s. 11d.; cost for February, 107l. 3s. 1d.; March, 121l. 6s. 4d.; April, 477l. 10l. 5d.—leaving balance in pursuer's hands of 39l. 17s. 3d. The amount paid for agencies had been 36l. 13s. 9d.; for labour, 233l. 17s. 1d.; engineers, 42l. 12s. 3d.; horse work, 41l. 8s. 5d.; rent, 10l.; compensation to Mr. White, for opening shaft on Goodluck lode, 20l.; merchants' bills, 116l. 3s. 7d.; Mr. Mare, on account of steam-engine, 200l.; sundries, 8l. 11s. 9d.; sick pay, 1l. 3s.—making a total of 705l. 19s. 10d.

LOSTWITHIEL CONSOLS MINING COMPANY.—A meeting of adventurers was held at Lostwithiel, on Monday, the 8th inst., at which upwards of 40 shareholders were present, and about 230 256ths were represented. The shareholders inspected the mine before the meeting, and all were highly gratified at the appearance of the lodes, and the prospects of the concern.—At the meeting, it was unanimously agreed that an engine should be immediately obtained, of sufficient power to try the lodes at 60 or 70 fms. deep. It is to be erected on the Milham, or No. 3 lode, which is within an easy distance of two large and kindly lodes on the south, and not far from the north lodes. The No. 3 lode is about 3 ft. wide, composed of gossan, spar, &c., spotted with ore, and impregnated with greens, yellow and grey ores being both found in the gossan. It is judged well worth an engine for its own sake, and will, doubtless, in connection with the parallel lodes, produce ample returns, if any dependence is to be placed on the result of trials in the neighbourhood. The parallel lodes are in the side of the hill, and a cross-cut from the 20 fm. level would intersect them at upwards of 40 fms. in depth. The engine will be obtained with all speed, and the sinking of the engine-shaft will be commenced immediately. The stratum through which it has to pass is a good killas, at a fair distance from granite—a character of country which has proved so productive in the mines in the adjacent district, Fowey Consols, Far Consols, Pembroke, &c. The shaft will be commenced at about 8 fms. above high water mark, and the best judges predict that ore will be found at the 20 fm. level.—The auditing of the accounts showed a small balance in favour of the company, and a call of 1l. per 256th share was made, to meet preliminary cost, prior to the further calls for entire cost of engine, and the future working of the concern.

WEST INDIA MAIL.—The *Forth* arrived at Southampton, on Thursday—her dates are—Jamaica, May 24; Puerto Rico, 28; Cuba, 19; Demerara, 19; Trinidad, 21; Barbadoes, 24; Grenada, 25; St. Vincent, 26; Martinique, 27; Antigua, 27; and Fayal, June 12. Her cargo consists of 96 casks of coffee; 88 bales of sarsaparilla and bark; 838 ozs. gold dust, and \$1260.

BRAZIL MAIL.—The *Swift* packet, Lieut. Douglas, arrived at Falmouth, on Wednesday, with the Brazil mails. The dates are—Rio de Janeiro, April 25; Bahia, May 5; and Pernambuco, 12th. On freight, 7795l.

The Rio Grande, Rio Bravo, and Rio del Norte, are so many different names of the same great river, which rises in the southern slope of the Rocky Mountains, and runs nearly due south, almost 2000 miles into the Gulf of Mexico. Its course is in good part through a thinly peopled desert, in some places mountainous, in others composed of wide, sterile plains. Valuable mines of gold and silver exist in the province of Santa Fé, some 1500 miles from its mouth. The river is generally rapid and rocky, rendering navigation dangerous, if not impossible, but we believe it may be ascended by steam-boats some 400 to 500 miles. Matamoros, 70 to 80 miles from the Gulf, is the usual head of navigation.

MACHINERY AND MECHANICS FOR SPAIN.—The British-built clipper-ship *Baze*, now in the Humber Dock, Hull, and nearly loaded with iron machinery from Sheffield, for Gijon, in Spain, has been preceded by two or three other vessels, and will be followed by several more, similarly laden, and for the same destination, all employed by a company at Sheffield, who, favoured by the Spanish Government, with the permission to import duty free, have entered into and are expeditiously completing a contract for the whole of the machinery necessary for the working of an iron mine near to Gijon, and the conversion of the ore into metal of approved qualities. Each ship takes out, besides engineers, mechanics of the various trades necessary to the perfection of the contract.

SILVER VALLEY MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—On reading the report of the annual meeting of the adventurers in the Silver Valley Mines, I fear the observations of the chairman, in regard to the value of some specimens sent by me from the mines, might be misunderstood; these specimens were native silver, and worth 4s. to 5s. per oz., but were picked specimens from the richest part. It is impossible to say, what may be the value of the quantity broken of inferior ore; but if it proves to be worth 50l. per ton, after being prepared for market, I shall be satisfied. There is also one more error (which I presume to be a misprint), that I represented the tin lode *amazing* in richness in depth—my observation was, that the lode proved to be *increasing* in richness in depth. I am sure you will excuse my troubling you with these observations, which are only made for fear of any misconception; at the same time I feel confident, that the observations of the chairman were not made with any intention to overrate the value of the ore raised, but merely referred to the picked specimens sent to London. The operations of the mine are being carried out with every regard to economy and spirited prosecution; and, if properly followed up, I am sanguine of the ultimate results. P. N. JOHNSON.
Assay-office, 79, Hatton-garden, June 16.

WHEAL GOLDING MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I noticed in your Journal of the 13th inst., a report on Wheal Golding, said to be mine, which assertion I beg to contradict. Perhaps the Messrs. Smith, Julian, and Co., will have the goodness to make a secondary perusal of the letter which I sent them, wherein I think they will find that the report is not from me, but a mere quotation from an individual, who worked in the mine just previously to its “knocking.” I do not contradict the facts of the report, because I know scarcely anything about the mine—indeed, I was never underground there—still, if what the almost general report of the neighbourhood says be true, it is a property, and such a speculation, as rarely met with, considering the present advanced price of lead.—JOHN R. PILL: *Perran St. George Mines*, June 16.

MINING SHARE TRANSACTIONS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—A question of considerable importance arises in connection with mining transactions, and to which I wish to call your attention, in the hope that you, or some of your numerous correspondents, may be able to decide it. We all know that in dealings in shares, both on the Stock Exchange and in the mining market, parties are generally considered bound in honour to complete their contracts, however unfavourable they may turn out; but there are, we also know, some who have such undefined, strange, and wild notions of honour, that unless you can catch them in black and white, they repudiate all transactions that may be disadvantageous to them, and, as is too often the case, throw the loss upon the agent, or middle man. I want to know, Mr. Editor, how such parties are to be dealt with? Cannot an agent enforce a contract made in the presence of a credible witness, without having a written agreement? If he cannot, there is something radically wrong in the system of share dealing, and it is time some rules for the government of the market should be adopted. A black board stuck up in a conspicuous place, with the names of all “repudiators” upon it, might have some beneficial effect, if no other can be thought of.—X. Y. Z.: *London*, June 19.

[ADVERTISEMENT.]

ON THE PREVENTION OF EXPLOSIONS IN MINES.

TO THE NOBILITY, GENTRY, CLERGY, AND MINE-OWNERS GENERALLY.

MY LORDS AND GENTLEMEN,—I beg, through the medium of the *Mining Journal*, to state, that my first sheet, with sections, is published, “On the Subject Matter of Explosions in Mines,” bearing reference to a secure manner in protecting the air-ways by firm, inexpensive stoppings in the main lines, so as to avoid suffocation. Under such provision, the destroyed combination of oxygen, and the carbonaceous nitrogenous gases, are removed at an early period, saving the miners from destruction by these irascible properties—trusting it will meet with the views of all practical parties, and those I have the honour to address. The after draught—so termed, by the rushing in of the air after an explosion—I have also given my ideas, framing a preventive to guard against the unaccountable consequences of such direful effects, destroying, generally, nigh to the amount by explosion. The whole, I trust, contained in the sheet, will be approved—the apparatus, in this instance, is not expensive in any mines; “the northern mines are certainly more complicated, requiring more matter.” It has a self-action in operation, and the model shows its due action. With a view of a patent, it has been kept back; feeling the duty owing to society for the benefits I fully expect to result, I thus most humbly offer my promulgations,—trusting after serious exposures, to meet with humane assistance, on behalf of the mining society, and to ease my unwearied application for years, as also finance thus injured.

My next sheet will contain the brattice shafts and brattices, the order and system in securing them, with other matters. Some few respectable parties have seen portions of the whole time past, who are sound colliers, and acquiesce in the security. I trust that I shall be enabled to compile a work combining the whole, which my experience for 35 years enables me to do. I most humbly request the kind able assistance of all parties interested to give case, in order to save the working classes from such awful departures, that of instant death—“*Palmam qui meruit ferat*.” Further particulars can be had, on application to me, accompanied by a Post-office order for 2s. 6d.; or, if from a working man, 8d. each.

Longton Potteries, June 16. W. HEATH, C.E. AND MINING SURVEYOR.

THE MINER.

“There’s danger in the mines, old man,” I exclaimed to a miner, who, with his arms bent, leaning against the sides of the immense vault, absorbed in meditation—“it must be a frightful life.”

The old man looked with a steadfast, but somewhat vacant, stare, and then, in half-broken sentences, he muttered, “danger—where is there not danger—on the earth or beneath it—on the mountain or in the valley—on the ocean or in the quiet of Nature’s most hidden spot—where hath not death left some token of his presence?”

“Truly,” I replied, “but the vicissitudes of life are various—the sailor seeks his living on the waters, and he knows each moment that they might engulf him—the hunter seeks death in the wild woods—the soldier in the field of battle—and the miner knows not but that the spot where he now stands to-morrow may be his tomb.”—“It is so, indeed,” replied the old man, “we find death in the means we seek to perpetuate life—’tis a strange riddle, who shall solve it?”

“Have you long followed this occupation?” I asked, somewhat struck with the old man’s manner.—“From a boy—I drew my first breath in the mines—I shall yield it up in their gloom.”

“You have seen some of these vicissitudes,” I said, “to which you just now alluded.”—“Yes,” he replied, with a faltering voice, “I have. There was a time when three small boys looked up to me, and called me father; they were sturdy striplings. Now, it seems but yesterday they stood before me in the pride of their strength, and I filled, too, with a father’s vanity! But the Lord chasteneth the proud heart—where are they now? I saw the youngest—he was the dearest of the flock—his mother’s spirit seemed to have settled on him—crushed at my feet, a bleeding mass; we were together—so near that his hot blood sprang up into my face. Molten lead had been more lasting than those fearful drops. One moment, and his light laugh was in my ears—the next, and the large mass came; there was no cry of terror, but transition to eternity as was the lightning’s flash—and my poor boy lay crushed beneath the fearful load. It was an awful moment! but time, that changeth all things, brought relief, and I still had two sons. But my cup of affliction was not yet full—they, too, were taken from me. Side by side they died—not as their brother, but the ‘fire-damp’ caught their breath, and left them scorched and lifeless. They brought them home to the old man; his jewels—than whom earth’s richest treasures in his sight had no price—and told him he was childless and alone. It is a strange decree that the old plant should thus survive the striding things we shaded, and for whom it would have died a thousand times. Is it surprising that I should wish to die here in the mines?”

“You have indeed,” I replied, “drunk of affliction—whence do you derive consolation?”—The old man looked up—“from Heaven; God gave, and he taketh away, blessed be his name.”

I bowed my head to the miner’s pious prayer, and the old man passed on.

LANCASHIRE COAL MINES.—In the course of an examination on the Oldham District Railways Bill, Mr. J. Harrop gave a description of the coal mines about Oldham. It appears that they conveyed from the Royton Mines 410 tons of coals per day; these seams were 3 ft. 6 in. thick. It would produce one ton per yard, working half an acre per week. Two-thirds of the mine were worked out; but taking it at one-half, it would take only 23 years to work out the Royal mine at Royton, instead of 99 years, and a renewed lease, as stated on the other side. The Copperras-house Mine was 39 ft. thick; this, the adjoining Chamber Collieries, and Warmley-wood Colliery, were the most valuable mines in the district; and to these no accommodation was offered by the Oldham District Railway. Six thousand tons of coal were raised from these mines per week; and from the Warmley Colliery alone, 150,000 to 170,000 tons were sent to Manchester weekly. He could state that four-fifths of the whole collieries were not accommodated by the district lines.

METALLURGIC INDUSTRY OF FRANCE.

LEAD.—There are in France 39 concessions of lead and silver mines, but the greater portion have for a long time been unworked, or very imperfectly explored. Only three are important establishments, those of Pont-l’Eveque (Finistere), that of Vialas (Lozere), and Pontigbaud (Puy-de-dome). In a future Number, we shall give a more detailed account of the production of lead, but for the present we will confine ourselves to the working of the metal only. The French have greatly improved lately in the casting of lead, in consequence of the introduction of steam machinery; and it is rapidly increasing, particularly as compared with 1844. Messieurs Simon, of Paris, have introduced the method by machinery of flattening lead and zinc, and the making of leaden tubes and pipes by pressure, and without soldering. They have succeeded in reducing the thickness of the leaden plates to the thinnest degree, and can draw them out to any length; the diameter of these tubes vary from 2 to 110 millimetres. This process is rapidly effected by an hydraulic press, worked by a steam-engine, which propels the lead in a half state of fusion from the bottom to the top, along a wire, and the tube, as it gradually rises, rolls itself over the mill, and then becomes quite perfect, for which method they have received one of the first prizes. M. Cavailler, of Marseilles, exhibited—first, an alloy of lead and arsenic for manufacturing shot; second, hard flattened lead; third, refined tin. Arsenic lead is now generally employed in France, instead of sulphate of arsenic, in the manufacture of sporting shot, and that at a very low rate. By this new composition the lead becomes hardened, by being tempered, and can be made into sheets for the sheathing of vessels. The refined tin is employed to great advantage in the lining of various utensils. Messieurs Dufour and Demalle, of Paris, also make very large sheets of lead, on an average amounting annually from 1,600,000 to 1,800,000 lbs. Messieurs Loysel and Habin, of Paris, are the proprietors of a very large manufactory at Montvilliers, in which they produce annually 800,000 lbs. of flattened lead, only employing from four to five workmen. At Paris they make leaden pipes by means of steam. M. Kent Pécron, of Boulogne-sur-mer, who is well known as a most clever inventor, was rewarded with a medal at the last exhibition of industry, for the perfection to which he has brought the alloyed covers and other articles in lead.

COPPER AND BRASS.—The Copper Company of the Foundries of Romilly (Eure), presented to the exhibition various articles in copper and brass of the finest execution—among which must be particularly noticed an establishment for the making of locomotives, iron bars of the largest diameter, forged nails for the sheathing of vessels (which were made by a steam-engine, producing 70 per minute), and also pins of different sizes, which they are able to sell at a moderate rate. This last factory has been but recently established at Romilly, and has some high furnaces at their works for the treating of copper ores, received from various parts of South America, but chiefly from Corocoro, in Bolivia. M. Victor Frèrejean, at Vienne (department of the Isere), manufactures in his establishment, at Pont-l’Eveque, to the amount of 80,000l. annually, of every description of articles in copper and brass, on a large scale, for the navy and trade; besides the above, he is proprietor of several other extensive factories and furnaces, which he works with great talent, and which places him in the rank of one of the greatest metallurgists in France. It was at his establishment that M. Ebelmon, engineer of mines, through his complaisance, was enabled to make the important experiments on the transformation of combustibles, or fuel, from oxidated carbonic gas. M. Thiebaut has a first-rate establishment in Paris, where every article in copper and brass is made from the smallest to the largest scale, as well as copper cylinders. It was at this factory that the large sheets of metal required in the building of the trans-Atlantic steamers were cast. Messrs. Estivant brothers, at Givet (Ardennes), have several factories, foundries, and furnaces, worked by a water-mill. In 1843, they employed 110,000 lbs. of red copper, and 600,000 lbs. of zinc (without including the old metal), which amounts annually to upwards of 76,000l. Messrs. Mather and Co., of Toulouse (Upper Garonne), possess an extensive establishment, advantageously situated on the River Garonne, near the mouth of the Languedoc Canal, by which they receive the rough material, and send it out manufactured. The fall of water works a machine of 80-horse power. They refine in this factory the various coppers of South America, particularly those of Chili, and lead from the adjacent parts. There are two refining furnaces, two for rebaking, two forges, two flattening mills, steam hammer, &c. They annually work 400,000 lbs. of copper, and 80,000 lbs. of lead, yielding about 22,000l. Messrs. Robert and Co., of La Villette, treat copper ores from America and Mexico, and also tin. They have several furnaces, and M. Robert, who was formerly only a simple workman, was the one who erected them. The copper ores chiefly treated are from the mines of Corocoro, in the mountains of Bolivia, at about 300 kil. from the coast. This ore is very rich, consisting of a mixture of very small grains of native copper, and little grains of quartz, like sand. They produce annually 12,000 cwt. of refined metals. Besides the above, there are several other very extensive establishments, in which copper and brass is treated to great perfection.

THE MINERAL WEALTH OF SOUTH AUSTRALIA.—No. IV.

BY FRANCIS DUTTON, ESQ.

[Concluded from last week's Mining Journal.]

It is not too much to expect, that the necessary explorations should be conducted by the Government themselves—and it is to be hoped that this important subject may meet with some attention therefrom. It is true, the extensive coal-fields north of Sidney will probably, at a future time, be made available for the above purposes; the Australian Agricultural Company, in whose hands is the monopoly of the coal mines, ought to be the first, on that very account, to turn their attention to the subject; a chartered company, like theirs, with large capital and special privileges, would consult the interests of all the shareholders, by opening this new source of demand for their coal. The port of Newcastle, on the Hunter’s river, is quite as convenient for the erection of smelting establishments as Swansea is. South Australia would not be long in sending the copper to be smelted, if once the furnaces were erected; coal exists there to an unlimited extent, and the present demand does not take off their hands a tithe of the quantity they could raise from the three pits, over which powerful engines are already erected. The smelting of the copper ores of South Australia would cause a large consumption of the company’s coals, and the benefits conferred would be mutual. As regards the influence the large quantity of copper, which will in some years be imported into England, may have on the market, it need not be regarded with the least anxiety by those who might fear that the price can be materially affected by it. Copper is a metal of such general utility, and applied to such numerous purposes, that the greater the supply the more extensively will it come into use; the development of the South Australian ores will not be looked upon with a jealous eye by the Cornish mining interest, as it does not in the least interfere with their prospects; the produce of both countries being essentially necessary—the one to the other—for admixture by the smelter; and the general claims of South Australia, to take up a very important position amongst the great mining countries of the world, he sums up as follows:—An already explored extent of country, abounding in metalliferous deposits, 150 miles long by 30 miles in breadth; the absolute fee simple of the soil vested in the owner; unsurpassed richness of the ores found, whether copper, lead, or iron; unparalleled abundance of the ores in those mines already at work, cropping out at the surface of the ground; easy access to all parts of the colony, and unlimited supply of transport for bringing the ore to the port; a constantly increasing supply of labour, and facilities for sending the ores to England at a moderate freight; abundance of animal and vegetable food produced in the colony to support a large population, such as an extensive mining country will concentrate in a small space, added to a most healthy climate; favourable prospects of being able to reduce the bulk of the ores by calcination and smelting—thereby saving cost of freight, and in the course of time supplying the India market with metal; a thoroughly well-organised Government; a flourishing state of the colonial finance; the greatest security for life and property prevailing in the colony; a free, industrious, and well-disposed population; and the British laws administered alidly and impartially.

ARTESIAN WELLS.—At the meeting of the Society for the Encouragement of National Industry, at Paris, M. Combes read some interesting papers on this subject; one of which was a description of the Artesian wells at Mondorf, which are being bored under the superintendence of the celebrated German well-sinker M. Kind. These wells are much deeper than that at Grenelle, but will not exceed half the cost. The object is the exploration of the district for the discovery of extensive salt deposits supposed to exist in the neighbourhood. An Artesian well has for some years past been boring at Calais, but hitherto without success; should they have to go beneath the chalk into the green sand formation, where water will, doubtless, be found, it will present this curious fact, that the water will come from England!

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.	
Bank Stock, 7 per Cent., 206½	Belgian Bonds, 4½ per Cent., 97½
3 per Cent. Reduced Ann., 95½	Dutch, 2½ per Cent., 69½
3 per Cent. Consols Ann., —	Brazilian, 5 per Cent., 82
3 per Cent. Annuities, —	Chilian, 5 per Cent., 50
3½ per Cent. Ann., 97½	Mexican, 5 per Cent., 28
Long Annuities, 104	Spanish, 5 per Cent., 24
India Stock, 10½ per Cent., —	Ditto Deferred, —
3 per Cent. Consols for Acc., 95½	Portuguese, 4 per Cent., 80½
Eschequer Bills, 100M, 11½ p.m.	Russian, 5 per Cent., 116½

MINES.—The mining share market has assumed a much more healthy appearance since our last, although there has not been any great amount of business done; at the same time, most of the shares sold have maintained former quotations. Transactions in the following have been done during the week, viz.:—Callington, Tamar, Tincroft, Stray Park, Treleigh, Fowey Consols, Treleway, Mary Ann, Wheal Concord, Trawallack, Lamerhoo, West Shepherd, Holmbush, East Tamar, West United Hills, Wheal Gill, &c.

MONEY MARKET.—There is very little to notice in the money market; consols have been steady, from 95½ to 96; and comparatively but little doing in any of the other stocks. The foreign market business has been equally dull, but prices have been rather better on the whole.

RAILWAYS.—The speculations in railway shares or scrip, have been on a very limited scale, and seldom has the market shown so little animation as during the last week. There is evidently a want of confidence in the capitalist to invest his money in railways, as he fears the liabilities he may be subject to by the rapid demands the new companies are making by way of calls on shares, which must be naturally looked for: a reaction will, doubtless, take place when this all-absorbing gauge question is finally settled, and that the public know that the great railway companies and the Legislature come to a better understanding on the subject, and all controversy is at an end. Money is not wanting in the City and the large towns, but the late panic is not quite forgotten.

MEETINGS.—The following railway meetings have been held since our last:—A special meeting of the scripholders of the Shropshire Mineral, at the London Tavern, on Saturday, in order to receive a report of the committee appointed by the shareholders, at the general meeting, held on the 20th February, 1846; Ald. Copeland, M.P., in the chair. Mr. Wilkinson read the report, which sets forth some very serious charges against certain gentlemen connected with the company. It appears, a sum of 21,000l. was spent in the purchase of shares, drawn by checks on the shareholders' money, and that by parties of the finance committee, and that there were 11 members of the committee of management who had never paid up a single share. There appears to be also many other cases of railway trickery. The report was passed; and, after a few observations on the part of the chairman upon such conduct, he proposed various resolutions for the winding-up of the concern, and to take legal and criminal proceedings against the guilty parties, which were unanimously adopted.—A meeting of the shareholders in the Hayle Company was also held, for the purpose of considering an agreement with the West Cornwall Railway, which was adopted.—The North Kent have issued a statement in support of a recommendation of their bill, enforced by a variety of allegations, which, on the ground of competition and freedom of enterprise, appears to tell very much in their favour.—On Monday, an adjourned general meeting of the Midland and Eastern Counties was held at the London Tavern, to investigate the accounts, and to read the report on the subject, from which it appeared, that 35,000 shares were issued in October, but about 18,000 were paid upon. The funds at present in the Accountant-General's and banker's hands, and subscriptions, amounted to 48,176l. Taking into consideration the claims, the assets will be 25,846l. 19s. 4d.; adjourned to Monday.—The proprietors of the Gravesend and Rochester Affirmation Company, met on Wednesday, at the George and Vulture Tavern. The chairman (John Moxon, Esq.) said, the sale of the railway had been already approved of, and had now to be submitted to them, pursuant to the sessional orders. The amount of shares was 9700, and of these 5167 were represented in the room, and constituted a sufficient number. A resolution, authorising the sale, was carried unanimously.—A meeting of the directors of Irish companies, and of noblemen and gentlemen interested in them, was held on Thursday, at the King's Arms Hotel, Palace-yard, to take into consideration the propriety of an application to her Majesty's Government, for a loan to Irish railway companies, to enable them to increase the number of persons now employed in the works in progress.—The Duke of Leinster in the chair. Several resolutions were passed, and a deputation appointed to wait on Government.—A meeting of the Exeter and Exmouth scripholders was held at the London Tavern, in pursuance of the sessional orders. The company's bill having been read, a resolution was then proposed, approving of the bill, and authorising the directors to proceed with it in the present session of Parliament.—The committee of management of the Direct Birmingham and Leicester have announced to the shareholders that, in consequence of the Parliamentary committee on the merits having decided against the bill, and in favour of the Leicester, Coventry, Nuneaton, and Birmingham project, they will immediately make a first return of 11 per share; the shares were selling this week at 14s. and 15s.—Some days since, a meeting took place between the committee of management of the Cheltenham and Oxford and the Great Western directors, for the purpose of promoting the most direct line from Oxford to Cheltenham. The line proposed, and unanimously agreed to, is to pass close to Northleach and Burford, on the south side, thence in a direct line by way of Witney to the Great Western station, at Oxford; the great majority of the scripholders have declared their adherence to the company.—A special meeting of the Richmond (Kew Branch) Company, was held yesterday, at the London Tavern, in order to consider the propriety of proceeding with a bill, now pending in Parliament, to enable the company to make and maintain a railway from Mortlake to Kew; resolutions, approving of the bill, were unanimously adopted; the chairman (William Chadwick, Esq.), announced that the railway would be opened between the 8th and the 15th of next month.

Bills which have Passed the Lords' Committee.—North Staffordshire; Stamford and Spalding; London and Birmingham (Aylesbury Railway purchase); Newcastle and Darlington Junction (Durham and Sunderland and Wearmouth Dock purchase); Newcastle and Darlington Junction (Pentop and South Shields Railway purchase). The preamble of the East and West India Docks bill was granted. The Duke of Richmond and the Bishop of Oxford gave evidence in favour of the Guildford and Chichester Line. The Great Leinster and Munster have the preamble of their branch, from Kilkenny to Clonmel, proved; and also the Cornwall, omitting the Doublebo's branch; Newcastle and Carlisle branches proved; London and Birmingham (canal arrangements); Great Leinster and Munster (No. 2, Kilkenny to Clonmel), clauses proved and passed; Gravesend and Rochester Railway and Canal (purchase and sale), preamble passed, and clauses to be settled respecting tolls; London and Brighton and London and Croydon Consolidation, preamble proved. Several have been postponed for a few days.

Bills which have Passed the Lords' Standing Orders Committee.—Norfolk (Dereham, Wells, and Blakeney Extension); London and South Western Railway (Hampton Court branch); London and South-Western Railway (Chertsey and Egham branch); Cambridge and Oxford; East Lincolnshire; Buckinghamshire (Tring to Banbury); Bridgewater and Taunton Canal Railway and Harbour; Great Grimsby and Sheffield Junction Extension; Great North of Scotland bill; Arbroath and Forfar amendment bill; Kilmarnock and Troon Railway; Midland Railways (Leicester and Swannington Railway, alteration and branches); Midland Railways (Nottingham and Mansfield branch); London and South Western Railway (Farnham and Alton branch); Scottish Central (Alloa branch); Glasgow, Airdrie, and Monklands Junction; Dunblane, Doune, and Callendar. The following have passed through a select committee on merits:—The Great North of England (Borough Bridge branch), making it compulsory on the company to erect bridges in every case where the railway crosses the public road, on the level; ditto (Bedaile branch), upon the same terms; Stirling and Dunfermline; the London and Birmingham (Camden and Euston stations enlargement); General Terminus and Glasgow Harbour Railway; Leeds and Thirsk (Knaresborough extension); Leeds and Thirsk (north-eastern extension, Watt to Hartlepool); Leeds and Thirsk (St. Helen's branch deviation); Reading, Guildford, and Reigate; London and Brighton (Wandsworth branch).

Bills Passed the Commons.—The Caledonian Railway (Mid Lothian branches) and the Lough Swilly and Lough Foyle Draining and Embanking Bills. The report of the Glasgow, Dumfries, and Carlisle Railway bill, and debate thereon, stands adjourned until Tuesday next. Glasgow and Belfast Union; Manchester, Bolton, and Bury (canal navigation and railway); Blackburn, Darwen, and Bolton (branch to Bury); London and Birmingham (branch to Nuneaton); London and Birmingham, &c., amalgamation; Midland Railway (purchase of Oakham canal). The following bills were read a second time yesterday, and ordered to be committed—viz.:—Larne, Belfast, and Ballymena; Limerick, Ennis, and Killaloe; Mountsallack Junction Railway; and Templemore and Nenagh. Third readings and passed—Argyll Canal; Banffshire Roads; Caledonian Railway (Glasgow, Garmark, and Coutrbridge branches); Eastern Counties (Epping extension); London and Blackwall (widening); Midland (Burton-upon-Trent to Nuneaton branch, and Ashby canal purchase); Newcastle and Berwick; Ditto and Darlington Junction (Durham and Sunderland Railway, and Wearmouth Dock purchase and branches); Scottish Central (Crete branch); the West London Railway (improvement and extension) bill was passed by a majority, after a discussion for postponement. The following reports were also brought up, and the bills ordered to be engrossed—viz.:—Blackburn, Darwen, and Bolton Railway; Cornwall; Dudley Canal and Birmingham Canal Companies amalgamation; Eastern Counties (stations enlargement); Great Leinster and Munster (No. 1, Carlow to Kilkenny); London and Birmingham, and Birmingham Canal arrangements.

It was decided yesterday, by the Lords' Committee, that the preamble of the Direct London and Portsmouth Railway Bill is proved; and that the preamble

of the Guildford, Chichester, Portsmouth, and Farnham, not proved. The parties can, if necessary, however, bring forward a bill for a deviation of the dock-yard branch next session. The decision created general surprise to all present.

The West Cornwall has been in committee for the last three days, when it was adjourned till to-day; the general opinion is, that the bill will be carried, having been read a second time, and being now tested on its merits.

It is stated that the London and York will commence operations, by making the loop from Peterborough to Lincoln.

Coals, by the agency of the Midlands, are now selling in Scarborough at as low a price as 7s. 6d. per ton.

We understand that the Electric Telegraph Company, who have just got their bill passed, have purchased the interest of Prof. Wheatstone, for 50,000l.

RAILWAY TRAFFIC.—From our official returns, it appears that the amount of traffic for the last week, on nearly 1800 miles of railway, was 170,396l., thus accounted for:—107,707l. for the conveyance of passengers only, 30,026l. for the carriage of goods, and a remainder of 32,663l. for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 45,282l.—*Railway Chronicle* of this day.

JAMAICA RAILWAY.—This railway has been now in operation for six months, and it will be a source of happiness to the directors and others interested in it in England, to know that not a single accident of any kind has occurred on it. Of its posterity also we can speak in the most favourable terms, the passenger traffic being quite equal to previous returns, whilst the merchandise traffic has been more than trebled within the last quarter.—*Jamaica Despatch*, May 29.

MESSES. LAMOND'S SALES.—TUESDAY.—East Indian (5s. pd.), 10s.; Buckinghamshire (2l. 2s.), 11. 15s.; South-Eastern and Dover—No. 4 (2l. 10s.), 2l. 5s.; Vale of Neath (2l.), 12. 1s.; London and Manchester—Rastick's (2l. 5s.), 2l. 17s.; London and Manchester—Remington's (2l. 15s.), 14s. 6d.; Harwich—Eastern Counties (2l.), 11. 1s.; Gooie and Doncaster (2l. 2s.), 11. 7s.; Direct Northern (2l. 10s.), 11. 15s.

FRIDAY.—Furness and Windermere (2l. 2s.), 11. 1s.; Manchester and Southampton (2l.), 11. 8s. 6d.; Surrey Grand Junction (1l. 7s. 6d.), 4s.; Cullin, Lima, and Pacific Coast (1l.), 14s.; Shropshire Mineral (2l. 2s.), 12s. 6d.; London and Manchester—Remington's (2l. 15s.), 14s. 6d.; Namur and Liege (6l.), 3l.; Caledonian Extension (2l. 10s.), 11. 6s.; Londonderry and Enniskillen (10l.), 3l.; Boulogne and Amiens (12l.), 11l.; South-Eastern and Dover—No. 3 (15l.), 17l. 17s. 6d.; Direct London and Portsmouth Atmospheric (3l. 15s.), 3l. 6s.; Great Western of Bengal (5s.), 6s.

MINE ACCIDENTS.

Carn Brea Mines.—S. Blight, aged five years, who had been to his father, a mine carpenter, was found dead under the coupling of a stamps machine, where he must have been dragged by his clothes becoming entangled with the machinery.

Wheal Ruby, Wendron.—W. Johns was killed by a fall in this mine.

Wheal Ellen.—J. Nicholls was killed by a sudden explosion of gunpowder.

Cefn Cwsk.—T. Matthews was killed at Messrs. Malins and Co.'s Works.

Vernall Colliery, Blaenwyrach.—R. Powell was killed by a fall of earth.

Cheadle, Staffordshire.—As five miners were descending the Deep-moor Colliery to their work, the rope broke, and they were precipitated a depth of 45 yards—three were killed, and the other two were dreadfully injured.

Craigawr Quarry.—D. Hopkins, aged 70, was killed while working here.

Whitworth, near Rochdale.—T. Person was killed by a fall of stone in a quarry.

Duckfield.—W. Brown was killed by an explosion at Messrs. Seville & Lee's Crompton, near Oldham.

Branding Drops.—C. Taylor was killed at the Hole bottom Colliery.

Cinderhill, near Wolverhampton.—J. Raybould was killed by a fall of limestone in a quarry.

Bilston Brook Furnaces.—Elizabeth Arrowsuch, aged 5 years, fell down the engine-pit, and was killed.

Bilston.—Two miners, named J. Fletcher (the "doggy") and T. Langston, were much injured by an explosion at Messrs. Riley's collieries.

Rosley Regis.—A poor boy, employed at Messrs. Pargeter and Darley's pits, got into the skip to ascend the shaft, without having sufficiently secured himself by the chain, when he was thrown out, and killed.

Tow Law Iron-Works.—Dreadful Boiler Explosion.—A fearful sensation has been occasioned in the neighbourhood, by the sudden explosion of a boiler at the Tow Law Iron-Works, Wolsingham, by which two men and a boy have been killed, and several others more or less injured. It appears that there was a small engine of about 12-horse power attached to the foundry for the purpose of driving the fan blast and grinding loam. The engine-house was an extensive building with a large chimney, and adjoined the foundry. During the day the engine apparently worked as well as usual, but about five o'clock in the afternoon the boiler burst with a tremendous explosion, carrying away the entire roof of the engine-house and the chimney, the engine itself being forced through a brick wall of 5 ft. thickness into the foundry. The engine-man was buried among the bricks and rubbish, and when found presented a dreadful spectacle, one of his hands and both his legs being blown off, one above the knee, and the other lower down. His face was severely scalped, and his bowels protruded upon his thighs. The other man killed was a labourer in the foundry grinding loam, and the boy was working with him at the same place. Though killed by the engine and brick work falling upon them, their bodies were not disfigured. The unfortunate men have both left families to deplore their loss.

DIED.—At his father's residence, on Saturday last, in his 26th year, William, son of Michael Williams, Esq., of Trevice. The deceased was a lieutenant in H.M. 54th regiment of Foot. He served under Sir Robert Sale in the Afghan war; and his premature death was caused by the arduous services in which he was thus engaged, especially during the siege of Jellalabad. He was a young man of great promise, and his early loss is deeply and generally lamented.

MINING IN NEWLYN.—Perran Wheal Virgin Mine, situated near the village of Calstock, in the parish of Ferrazburgh, is one of the most extraordinary discoveries ever made. The large north and south lode, which has been lately cut, is close to the surface, and instead of being worked with machinery, the lead is simply raised with the aid of pick and shovel. In this manner, 11 tons of lead were raised, during the past week, in three days. The mine has been visited by thousands of persons, and among the rest, many of the principal miners of the county, all of whom agree in describing it as the finest lode of lead ever discovered in the county. The lead has been sampled, and valued at 14l. per ton.—*Cornwall Gazette*.

IMPORTANT TO SHIPPERS OF COAL.—A letter, dated from the British Consulate at Charente, and addressed to George Shotton, Esq., North Shields, has been received within the last few days, stating:—"In consequence of a recent decision of the Tribunal of Commerce of Rochefort, authorising consignors of coal at that port to require masters of vessels to deliver at least 290 hectolitres for every keel of small coal stated by bill of lading to be on board, under penalty of loss of freight, and payment by them of the first cost or value of the quantity found deficient, and also unjustly depriving them of all right to claim freight or remuneration for any quantity delivered over and above the said 290 hectolitres per keel, as is sometimes the case when large measure has been put on board in loading—I consider it my duty to acquaint all shipowners and masters therewith, and to urge them, when chartering their vessels for Rochefort or Charente, to stipulate that freight shall be paid per keel of 285 hectolitres as delivered, without reference to the intake measure (that number of hectolitres being a fair average keel). They will thereby secure their rights, and prevent the consignees here taking an unfair advantage of them, in making them carry several tons of coal for nothing."—*Gateshead Observer*.

LITERARY NOTICES.

Wilme's Hand-Book for Mapping, Engineering, and Architectural Drawing, in which Maps of all Descriptions are Analysed, and their several Uses fully Explained: intended for the Use of Civil Engineers, Architects, and Surveyors, also for Naval and Military Academies, Engineering Schools and Colleges, and Draughtsmen—illustrated with 43 large Plates, and 39 Woodcuts, &c., &c.—By B. P. WILME, C.E. London: John Weale, 59, High Holborn.

This is a work of very great value to the student, and one which the most experienced engineer, architect, or surveyor, may study to advantage. We have not space, in our present Number, to give so detailed a notice as the work merits, but cannot allow a week to elapse without announcing its publication, and expressing our approbation of the excellent style in which it is executed.

Four Synoptic Tables on Railway Locomotion. By N. ALPH. BURNIER, C.E. J. Weale, High Holborn.

These tables, four in number, are intended to elucidate a comparison between the several systems of propulsion now before the public—when a calm consideration of the subject, and the arrival at just conclusions, is of so much importance, more particularly to those companies which have not yet commenced the formation of their lines. The first is the comparative advantages of the several systems of railway locomotion; the second, the theory of atmospheric railways; the third, special examples of the atmospheric system, as regards its practical working; and the fourth, comparison of the various apparatus for working an atmospheric railway. After due examination into these theories, the author deduces, that the atmospheric system, based upon natural principles, presents the nearest possible solution of the problem of locomotion; and that the unfavourable results, such trains, and the irregular speed obtained with these trains—are the consequences of apparatus constructed, without proper regard to the objects. These synoptic tables are most scientifically constructed, showing, at a view, the general effect of each system, and its defects; and cannot fail proving of considerable interest to the railway world generally, and to engineers especially.—We have the pleasure, in another part of our present Number, to be able to lay before our readers, the commencement of what promises to be a very able explanation of the principles on which the author founds his theory.

CURRENT PRICE OF GOLD AND SILVER.

Foreign gold in bars	per oz. £3 17 9	New dollars	per oz. £0 4 9
" " Portugal pieces	3 17 5	Silver in bars (Standard)	0 4 11
Silver coin to China	1247 ounces.		
Silver bars to Hamburg	12,000		

EXPORTATION OF THE PREVIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the last week:—

Silver coin to China	1247 ounces.
Silver bars to Hamburg	12,000

RAILWAY SHARE LIST.

RAILWAYS.	Paid	Closing pr. last week.	Closing pr. last night.
Aberdeen	£10	34	34
Amber, Nottingham, Boston, and Erewash Junction	2	11	11
Armagh, Coleraine, and Portrush—25l. shares	11	—	—
Birmingham and Gloucester—100l. shares	100	137	139
Birmingham and Oxford Junction—20l. shares	2	11	11
Bristol and Exeter—100l. shares	70	84	84
Bristol and Gloucester—50l. per share	30	51½	51½
Caledonian—50l. per share	5	11½	10½
Cambridge and Lincoln—25l. shares	11	—	—
Chelmsford and Bury	11	—	—
Chester and Holyhead—50l. shares	15	20	20½
Cork and Killarney—50l. shares	11	—	—
Cork and Waterford—25l. shares	21	—	—
Cornwall—50l. shares	11	—	—
Derby, Uttoxeter, and Stafford	5	—	—
Direct Northern—50l. shares	21	11	11
Direct Manchester (Remington's)—20l. shares	21	4	4
Ditto Hastrick's	54	34	34
Dublin and Belfast Junction—50l. shares	10	—	—
Dublin, Belfast, and Coleraine—50l. shares	21	—	—
Dublin and Galway—50l. shares	4	24	24
Dundalk and Enniskillen—50l. shares	4	—	—
Eastern Counties—25l. shares	71	—	—
East Lincolnshire	147 16s	23½	24
Edinburgh and Glasgow—50l. shares	11	—	—
Edinburgh and Perth	50	75	75
Exeter, Yeovil, and Dorchester—50l. shares	21	11	11
Gooite and Doncaster—20l. shares	42½	1 dis.	1 dis.
Grand Junction—100l. shares	100	—	—
Grand Union (Nottingham and Lynn)	10	—	—
Great Grimsby and Sheffield—50l. shares	5	—	—
Great Southern and Western (Ireland)—50l. shares	15	22½	22½
Great North of England—100l. shares	100	220	220½
Great Western—100l. shares	80	143	142
Guildford, Farnham, and Portsmouth—50l. shares	5	4	4
Hull and Selby—50l. shares	50	102½	103
Ile of Axholme	50	—	—
Lancaster and Carlisle—30l. shares	25	55	—
Leeds and Carlisle	21	—	—
Leicester and Birmingham—20l. shares	22½	—	—
Leicester and Bedford—20l. shares	22½	1 dis.	1 dis.
Leicester and Tamworth—20l. shares	42½	1 dis.	1 dis.
Liverpool and Leeds Direct—50l. shares	21	—	—
Liverpool, Manchester, and Newcastle Junction	11	—	—
London and Birmingham	stock.	227	—
London and Birmingham Extension—25l. shares	11	—	—
London and Blackwall	Av. 16l. 13s. 4d.	65	8
London and Brighton—50l. shares	50	21½	22½
London and Croydon	Av. 13l. 15s. 9d.	21½	22½
London and Greenwich	Av. 12l. 15s. 4d.	21½	22½
London and South Western	Av. 41l. 6s. 10d.	21½	22½
London and York—50l. shares	21	78	78
London, Warwick, and Kidderminster—50l. shares	21	21	21
London, Salisbury, and Yeovil—50l. shares	21	—	—
Londonderry and Coleraine—50l. shares	21	11	11
Londonderry and Enniskillen—50l. shares	5	—	—
Lynn and Ely—25l. shares	5	13	12½
Lynn and Dereham—25l. shares	5	—	—
Manchester and Leeds—100l. shares	62	124	123
Manchester and Birmingham—40l. shares	40	80½	82
Manchester, Buxton, and Matlock—20l. shares	42½	1 pm.	1 pm.
Manchester and Southampton	2	11	—
Midland	2	11	—
Ditto Birmingham and Derby	stock	148	150
Midland Great Western (Irish)—50l. shares	stock	122½	123½
Newcastle and Berwick—25l. shares	21	—	—
Newcastle and Carlisle—100l. shares	100	24½	25
Newcastle and Darlington Junction—25l. shares	25	44½	45½
Ditto New (Branding)—25l. shares	20	43½	—
Newport and Abergavenny	21	—	—
Newry and Enniskillen—50l. shares	21	—	—
Newark, Sheffield, and Boston—25l. shares	21	—	—
North British—25l. shares	17½	29½	29½
North Devon	2	—	—
Northern and Eastern—50l. shares	2	—	—
North Kent and Direct Dover—50l. shares	21	11	11
North Staffordshire—20l. shares	42½	34 pm.	34 pm.
North Wales—25l. shares	31	—	—
Norwich and Brandon—20l. shares	18	—	—
Northampton, Banbury, and Cheltenham	2	—	—
Oxford, Worcester, and Wolverhampton	12½	8½	8½
Perth and Inverness	21	—	—
Portsmouth Direct—50l. shares	21	—	—
Preston and Wyre—50l. shares	36	33	33
Richmond—20l. shares	50	30½	30
Rugby and Huddington—20l. shares	5	—	—
Scottish Central—25l. shares	7½	15½	—
Scottish Midland—25l. shares	10	—	—
Sheffield and Manchester—100l. shares	100	24	24
Shrewsbury and Birmingham	21	—	—
Shropshire Midland	21	—	—
South Devon—50l. shares	21	—	—
South Eastern and Dover	25	34*	34½
South Midland—20l. shares	—	29½	29½
South Wales—50l. shares	42½	1 dis.	1 dis.
Staines and Richmond—20l. shares	1	2½	1½
Trent Valley—20l. shares	5	—	—
Trent Valley and Holyhead Junction—20l. shares	21	—	—
Vale of Neath	2	—	—
Waterford and Kilkenny—20l. shares	3	—	—
Welsh Midland	21	—	—
Wills, Somerset, and Weymouth—50l. shares	21	—	—
Weymouth and Norwich—20l. shares	21	—	—
York and Carlisle	21	—	—
York	21	—	—
York and North Midland—50l. shares	50	98	99
York and Selby—50l. shares	30	—	—

BRITISH MINES.

LATEST CURRENT PRICES OF METALS.

[From our Correspondent.]

GLASGOW PIG-IRON TRADE.

COPPER ORES.

TOTAL PRODUCE.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

COPPER ORES

WORK PERFORMED BY CORNISH ENGINES.

COAL MARKET, LONDON.

THAMES TUNNEL COMPANY.

EXPORTS OF METALS TO INDIA FROM LONDON AND LIVERPOOL,
FOR THE FIRST FIVE MONTHS OF 1845 AND 1846.

PRICE OF TIN PLATES AT NEWPORT.

NOTICES TO CORRESPONDENTS

THE MINING JOURNAL

And Atmospheric Railway Gazette.

LONDON, JUNE 13, 1846.

During the now lengthened period that every description of business, more or less, has been under the depressing influence of the unsettled state of political and commercial affairs, we have, in this Journal, maintained the opinion of the improved tendency of the iron trade, after the measures before Parliament, connected with the importation of corn, and the tariff, should be passed into law. In a few days from this time, the new corn bill and tariff will be in actual operation. There is, likewise, the possibility of the American tariff not being long delayed in its progress; and, as the contemplated reduction of duty is from \$56 to \$14½ on sheet-iron, imported into America from England, the effect of this abatement would be to create a much more extensive demand for this description of manufactured iron. The recommendation of the Gange Commissioners, and the Government resolutions proposed thereon, will augment the quantity of iron required for rail on the lines to be constructed to suit the broad and narrow gauge, which union of the gauges (or by two substantive lines of railway, a narrow one, independent of the broad, which Mr. Huxton thinks safer than the union of the two gauges), is favourable for an advance in the value of rails, and, consequently, for the description of Welsh metal, suitable for making them—while the consumption of other pig-iron, adapted for foundry purposes in making steam carriages and tenders, engines, girders, culverts, iron roofing, turn tables, &c., must be considerably increased as the railways in progress, and to be made, are in course of construction. To this home consumption is to be estimated the iron required for ship-building and the increasing demand from abroad, which, for Scotch pig-iron, is now on a more extensive scale than was ever known.

In another column will be found a communication on the common practice in Cornwall, of "setting the work in mines by the job,"—or, as it is expressed in mining language, *tutwork and tribute*, to which too much attention cannot be given. Our correspondent has so fairly entered into the merits of the question, and there is so much reason and sound sense in his remarks, that it would appear to us superfluous to add another word. We will not enter into the question at present, but would be glad to receive the communications of those who, whether as practical miners, or otherwise interested in the matter, may be disposed to offer any observations for or against the measure proposed. It is too manifest, that a fathom of ground cannot be worked at a *farthing* cost,—as the miner must needs pay for the caudles and powder, as well as the pointing of his picks and gads. However, the question is now opened,—and, we trust both the mine adventurer and the working miner will not lose sight of a subject so important.

We have, in several former Numbers of the *Mining Journal*, noticed particularly the rapid progress making in Belgium and Prussia in the manufacture of zinc. This metal has only been introduced within a very few years, by the enterprising companies of the *Vieille and Nouvelle Montagne Sociétés Anonymes* of Belgium, and that of *Stolberg* in Prussia; but its great utility becoming more apparent and its consequent general introduction for all manufacturing purposes,—zinc has, therefore, taken a rapid stride in all the metallic markets of the continent, as well as in this country, which imports annually to a considerable extent, not only for our own consumption, but for exportation to the East Indies, China, our West India colonies, the Havana, Chili, and nearly the whole of Southern and Western America, where it is now becoming in general use. A *résumé* of the different companies already in full operation, we have little doubt, will be interesting to our numerous readers. The *Society of the Nouvelle Montagne* is established for the purpose of working the zinc and lead mines of Engis, Prayon, and *Nouvelle Montagne*, at Verviers, province of Liege. By their statutes, which have been constituted by a royal decree of his Majesty King *Léopold*, the chief board of the company is at Verviers, with branch offices in London, as far as concerns the English business, and in Paris, for the shareholders in France. The duration of the company's lease, or concession, is fixed at 20 years, which commenced on the 1st of June, 1844, and will expire on the 1st of June, 1864. At the expiration of this term, the company will continue to exist for a new period of 20 years, unless any opposition should arise six months previous to June, 1864, by a number of the shareholders, representing at least one half the social capital. Should the losses exceed by two-thirds the amount of stock issued—and if two-thirds of the shareholders assembled at a general meeting, and holding the said number of shares, are desirous of a dissolution of the company—it is definite, and they will have the majority; but such dissolution cannot be carried into effect, until after the sanction and authority of the Government is given.

Should there, however, be no dissent at the expiration of the periods stated, the company will have the power to renew their lease for any specified period Government may decide. By article 4 of the statutes, the company bind themselves to the working of the calamine and lead mines of Engis, Prayon, and the Nouvelle Montagne at Verviers, near Liege, in the manufacture of zinc, lead, and flattened metal in their furnaces, and other establishments they may erect, also to work the extensive coal pit at Engis, which have been concessioned to them. The social funds of the society are fixed at 120,000*l.*, divided into 3000 shares of 40*l.* each. The grant, or concession, of calamine and lead beds of Engis extend over an area of 401 hectares (acres) 9 ares and 73 centiares, with buildings, land, galleries, wells, a railway, wood, washing machines, &c.—every thing necessary to work them with advantage. The concession of calamine and lead of the Nouvelle Montagne, at Verviers, extends over a superficies of 1740 hectares and 91 ares, with commodious buildings, warehouses, sheds, wells, galleries, utensils, and every convenience for working the ores. On this grant is the small farm and water mill of Mangonbroux, which are held as a fee simple by Messrs. Simonis, the projectors of the company, for their exertions. We have already given the returns of last year in a former Number, and by the improvements that have been made by extensive additions of ovens, furnaces, and other requisite buildings, the report for this year, which will be presented at the general meeting, appointed to be held in September next, will be highly satisfactory, not only as showing a great increase of metal, but the progress the company is making.

The board of the mining company and zinc foundries of the Vieille Montagne is established at Liege, in Belgium. The duration of the society's lease is fixed at 18 years, from the 1st of January, 1937, and will terminate on the 31st December, 1954. At the expiration of that term the company will have an extension of 10 years (should there not be shown an opposition of at least one-half of the shareholders six months previous to the 31st December, 1954, waiting for a dissolution, with facilities to extend their lease. The social stock of the company is fixed at 200,000, divided into 2000 shares. This enterprise has been most prosperous, and will be a very flourishing speculation, as its returns last year, which we have given, shows a rapid increase, not only in the manufacture, but the de-

mand, for zinc and lead, which meet with a ready and lucrative sale in Belgium, France, the whole of Germany, the north of Europe, and the United Kingdom—a great portion of which is re-exported to our colonies. The next zinc mines in rotation are those of Stolberg, which have been very successful, considering the short period they have been worked; they are rich in calamine, or carbonate of zinc, and have one great advantage, as their is plenty of excellent coal and other fuel in the vicinity at a cheap rate, and they have the facility of railway transit within a short distance, so requisite in mining operations. The Grande Montagne, United Mines, &c., are also conducted on a large scale, and promise to be productive. The new association, forming under the title of the "D'Arleincourt Prussian Zinc and Coal Company," of which we gave a short notice last week, promises to be a very lucrative speculation, and is to be worked, we understand, by a company of English, French, and Belgian capitalists, who have purchased the concession of the Prussian Government from the Baron D'Arleincourt, at a high price. There is a great demand for zinc in the Rhenish provinces of Prussia, and they will have great facilities to export it to the markets of France, where there is always a ready sale, and good prices, by the River Meuse and railways, which intersect nearly every part of the country. We shall allude to this enterprise in a future Number, when it is more fully established, and the shares in the market; but at present, suffice it to say, we have not the slightest doubt that, being under the good management it is, it will prove a most profitable undertaking, as the grant is very extensive, and the land not only rich in ore, but coal of excellent quality abounds; and the mineral is not only to be found underground, but at the surface of the earth—so that the expense of working will be but very trifling, compared with other districts less favourably situated. It appears, the shares have been issued at 20*l.* each, and nearly all have been taken up in this country and the continent.

It is with pleasure that we refer to an announcement, which appears in our advertising columns, of the re-election of Mr. PETER STAINSBY as director of the Callington Mining Company. We are induced to travel out of our usual course, in referring to a matter which might be considered by many as of too private and personal a character to call for remark; but having, in our reports of the proceedings at meetings of the company, given publicity to the charges preferred against that gentleman, and the strongly-expressed opinions of parties thereat, we feel it only an act of justice to direct attention to the advertisement—from which it appears, that out of one thousand shares, of which the company is constituted, one holder of ten shares alone objected to his reappointment—that gentleman having vacated office in pursuance of the intention expressed by him. We are at a loss to know where Mr. Young was, but we are induced to suppose that he is at least old enough to think any further exposure, with an expression of feeling so strong as that manifested, would alone reflect on himself. We trust that Mr. FIELD, the chairman of the committee, and who (we are led to believe) has in this case acted as a director (to which office he was appointed), will, despite his declaration at the last meeting of the shareholders, at once put his shoulder to the wheel, and work in concert with the board, as now constituted. If there be errors or omissions, it is his duty, not only to himself, but to the shareholders at large, to rectify them; and after what has occurred, we can only express our hope, that while the past will be forgotten by "One and All," the future will meet with the attention of those appointed to protect the interests of the body at large.

BOLANOS MINING COMPANY.

The Bolanos Company make up their accounts at Zacatecas yearly, on the 31st March. The result from April, 1845, to March, 1846, both inclusive, will appear, by adding together the manager's monthly advices, as follows:—

	Hacienda Profit.	Mines Profit.	Cost of works of research (incorrectly called Loss).
1845—April	\$ 2,536 5 5	\$ 5,886 6 4	\$ 9,422 4 5
May	4,534 2 0	12,394 3 4	7,191 1 3
June	3,870 6 2	14,186 0 1	4,367 7 7
July	2,519 3 6	6,364 7 6	6,092 3 4
August	4,543 5 4	10,653 0 0	13,548 4 4
September	4,811 4 6	10,686 3 6	4,389 7 5
October	2,787 2 6	12,230 4 4	12,447 7 2
November	3,648 6 0	2,088 6 7	11,452 4 2
December	1,470 6 5	9,532 1 0	9,600 7 6
1846—January	425 3 4	2,438 0 6	11,630 6 6
February	2,120 7 0	11,429 6 1	13,146 1 0
March	3,822 6 2	6,421 7 2	4,739 1 7
	\$ 33,322 4 0	\$ 139,885 0 0	\$ 108,010 3 2

The hacienda profits belong wholly to the company.....\$ 33,322
The mines profits.....\$ 139,885
Are divided—5-19ths to the mine owners.....58,160
And 7-12ths to the company.....81,425
Showing the company's profit in the year, \$114,747, or.....\$22,949
Thus increasing the intrinsic value of the company's 13,960 shares 17. 10s. p. sh. 20,940

And leaving for London expenses and incidentals.....£ 2,009
Besides the \$108,010, added to the company's previous claims on various mines, payable out of the first profits those mines may give.

To those proprietors who may attend the forthcoming annual general court, these facts may be confirmed, and other interesting information supplied as to the state and prospects of the mines—Francisco de Paula, Celsina, Cino del Bote—funds in hand, &c.

MINING IN RUSSIA.

The produce of the Russian mines and washings has risen in importance only of very recent years. We have accounts, derived from official sources, down to 1843, which exhibit a very rapid increase; and, from 1843 forward, we have good reasons for thinking that the produce has at least kept up the supply given in 1843. The following account shows the progress of the productivity, from the year 1830 to 1843—viz.:

	Poods.	Pounds.		Poods.	Pounds.
1830	5	32	1837	132	39
1831	10	18	1838	193	6
1832	21	34	1839	183	8
1833	36	52	1840	255	27
1834	63	18	1841	358	38
1835	93	12	1842	631	5
1836	105	9	1843	1342	0

In addition to the quantity of 631 poods, obtained in 1842, the silver obtained from the mines of Kolyvan yielded 50 poods of gold, while the washings and mines of the Oural Mountains yielded no fewer than 810 poods; making a total of 971 poods—equal to 42,571 lbs. troy; which, at the Mint price of 46*l.* 14*s.* 6*d.* per pound, would be equal to no less than 1,989,128*l.*, and the produce of 1843 was estimated at 3,200,000*l.*

The importance to be attached to all operations connected with mining—whether as affects the exploring of lodes, the management in Cornwall or London, or the sale and purchase of mining property or shares—is such as naturally to excite our attention, where any error, however trivial, may be found to exist. We have, on more than one occasion, adverted to the sale of shares by agents or brokers, and now feel called upon to remark, on the late sale of shares at the auction market, by Mr. Warton, when, from an error in the catalogue, shares were sold at about one-fourth the value—although, we presume, the conditions will settle the matter. We refer to a sale of shares in Fowey Consols, which are described as being 128ths, whereas the mine is divided into 512th shares: the price given was about 55*l.* per share, which may be considered as an advance on the market value of each share of 5*l.*; but it appears that the cause of this advance was, that the buyer observed that the auctioneer (or those by whom he was employed) had described the shares as 128ths, instead of 512ths; and thus he paid a premium of 5*l.* on the market price, but he secured four shares for one. We doubt not but that an amicable understanding will be arrived at, but the circumstance shows the necessity of caution being observed in matters of this nature.

ÉCOLE ROYALE DES MINES DE PARIS.—At the recent examinations at this institution, Mr. J. Arthur Phillips, of Cornwall, stood first in mineralogy, metallurgy, and theoretical and practical chemistry.

PROGRESS OF FRENCH MINING INDUSTRY.

(FROM OUR PARIS CORRESPONDENT.)

Not content with their mining operations in France, and Belgium, and Germany, French capitalists have just taken Italy in hand. In the mountains of Ripa, in Tuscany, some extensive deposits of mercury were found a few years ago, and concessions for the working of them were obtained by three or four Frenchmen. Having reason to believe that the mercury extends to a considerable depth underground, the Frenchmen have just united their concessions, and are about to get up a company with a large capital to carry on operations on a grand scale. It is believed that the Ripa Mountains contain other mineral riches of great value.

At a recent meeting of the Paris and Lyons Railway Company, the directors laid before the shareholders a full statement of the position of affairs. It appears, among other things, that the iron establishments of the Creusot, Commentry, and Chatillon, have contracted to supply 73,000 tons of rails at 367 fr. (14*l.* 13*s.* 7*d.*) per ton. Contracts for 30 locomotives, at 46,000 fr. (1840*l.*), have also been entered into. Of the 400,000 shares of the company, 102,686 are held by Englishmen; 284,059 by Frenchmen; and 13,255 are not issued. 50,000,000 fr. (2,000,000*l.*) had been received in deposits, and were disposed of by the payment of 16,000,000 fr. as caution money; 8,000,000 fr. on account of the sum due to the Government for works executed; 23,903,026 fr. in rentes; 1,500,000 fr. in Treasury bonds; and 596,937 fr. at the bank for current expenses.

A sufficient number of the shareholders of the Mines de la Grand'Combe not having been present, at the meeting called for 24th May, another assembly has been summoned for 27th September next, at Nîmes.

The proposition of M. Delessert—to the effect, that for the future no amalgamation of mining companies shall be legal—has been definitively withdrawn from the orders of the day of the Chamber of Deputies; this is considered equivalent to its rejection. Some of the Radical newspapers rave at the proceeding, as an abominable abandonment of the public interests; but the more enlightened journals, in common with the mercantile classes, rejoice at it—for they feel that the principle it endeavoured to establish, would be an unwarrantable interference with commercial enterprise. In consequence of the withdrawal of M. Delessert's proposition, the amalgamation of the coal companies of the Loire may be considered what, in diplomatic slang, is called *un fait accompli*; for though, general in its terms, the proposition was specially levelled at them, and its adoption would have rendered it imperative on the Government to break up their confederation.

A letter from St. Dizier, of the 12th inst., states that white cast-iron was taken at 190 fr. the 1000 kil., delivered at St. Dizier. Orders from Paris for the lumines were taken at 380 fr., delivered at St. Paul; but at St. Dizier they were 370 to 375 fr., according to the establishment. Beaten iron fell to 370 fr., and a further decline was expected, owing to the falling off in the consumption. The supply is also on the decline—so much so, that several orders for cast-iron have been executed by furnaces specially constructed for the *fer battus*, and, moreover, several fires were expected to be put out. The fine weather has caused the supply of iron ore to be very active. During the last two years it was insufficient. A large consumption is expected in 1846. The supplies and the prices are less elevated than in preceding years. At Besançon, the ironmasters assembled in great numbers, for the fair of Ascension, and brought their discussions, which were very lengthy, to a close on Saturday. Generally speaking, the prices were settled at a decline. The fine cast-irons de Comté will be delivered at 235 fr. the 1000 kil., which is 5 fr. less than the preceding fair.

The capital of the Vieille Montagne is 5,040,000 fr., divided into 5000 shares; of the Nouvelle Montagne, 3,000,000 fr., divided into 3000 shares; of Antonin and Mines Réunies, 2,000,000 fr., in 2000 shares; of the Zinc de Stolberg, 2,000,000 thalers, or 7,500,000 fr., in 10,000 shares; of the Grande Montagne, 3,000,000 fr., in 3000 shares.

During the week the newspapers have teemed with advertisements of the meetings of coal and mine companies, to consult on the propriety of an extension of operations, and an increase of capital. Thus far the mining movement has lost nothing of its intensity; *au contraire*, it rather appears on the increase. Almost every day some new project is brought forward, and the speculations in old established companies have become extraordinarily numerous. Such is the mania for mining speculation, that it would be a good thing for any one of your readers to go to Belgium or Germany, and to get a concession of a coal, or lead, or copper, or zinc, or iron mine, and then come to Paris, and turn it over to a company. By a little tact, he would be able to obtain thousands for what would only have cost him hundreds, or, perhaps, nothing. If I were a speculative man, I certainly would try it. "Strike while the iron is hot," is a very good adage to act upon; and just now the "iron" of mines and mining, and coal-pits, is extraordinarily "hot" indeed.

The *Moniteur* publishes the usual ordinance, comprising the regulations of admission to the Royal School of Mining in this capital. It does not state that candidates for admission must be French, though they must speak the French language; and, therefore, there is no doubt that foreigners would be readily admitted, if found properly qualified. In the school the very best education that can be given is afforded to those who propose to devote themselves to mining pursuits, and to this education is united the advantage of practical instruction. The school is directed by mining engineers of the highest eminence, and by scientific men of the greatest learning. As there is no such institution in England, young men preparing themselves for the superintendence of mines, would do well, if possible, to avail themselves of the advantages of this school; and fathers of families destined their children for the mining career, could not possibly do better than send them to Paris.

The great event of the week is the opening of the Northern Railway from Paris to Belgium, which took place on Sunday with extraordinary pomp. It was at Lille, Amiens, and Brussels, especially the former, that the greatest rejoicings took place. The precise period at which this great railway will be opened for public traffic, is not stated. I do not think it is likely to be very soon, for the station is all in confusion, with yards unparaded, sheds unfinished, and so on; and the sheds for merchandise, locomotives, and carriages, are but very little advanced.

MINES AND METALLURGY IN FRANCE.—The Administration of Mines has specially denoted the department of the Upper Marne as being the most abundant mineral bed throughout France. Its influence on the value of iron at Paris and Lyons is such, that in the trade it is admitted that the quotation of prices of iron throughout the country are regulated according to the price of iron in Champagne. Hitherto what has been wanting for the prosperity and extensive working of this rich metalliferous group has been a cheap means of transit to the capital and other parts of the kingdom of its valuable metal and ores; it will now fortunately overcome that great drawback to mining industry in every country, by the establishing of the projected railway, which has obtained the concession of the Government. The Upper Marne alone produces one-ninth of the cast metal, and one and a half of the iron manufactured throughout the whole of France. The directors of the General Administration of Mines have sent an agent, with several experienced workmen, to the department of the Upper Marne, for the purpose of exploring a rich coal mine, which is stated to exist in the Valley of Biesme. These workmen are at present at Senades, and there is no doubt the undertaking will be most successful. By a return of the quantity of mineral and vegetable fuel which has been received at the different quays of Paris in 1845 and 1844, it will be found as follows:—Coal and coke in 1844, 2,220,707 hectolitres; in 1845 there was an increase of 219,867; ditto in 1838, 1,567,359; ditto increase in 1845, 873,216; charcoal in 1840, 2,721,613; ditto increase in 1845, 379,568. This rapid progress in the demand for charcoal in Paris, which up to the first three months of the present year amounts to 133,582 hectolitres, notwithstanding the strong competition that has been shown by the coal merchants, from which one may conclude that, if the French Government does not increase its forests by new plantations, instead of hewing down the greater part of them, France will, in a few years hence, be completely exhausted of mineral fuel, and the means of making charcoal. This result is greatly feared by a number of speculators, both in mines and manufactures, where wood and charcoal can be employed with advantage, whilst carbonic fuel being of a stronger and sulphuric nature, would be far less adapted for their industry. The question is under the serious consideration of the Government and the Department of Woods and Forests—as the consumption of both wood and charcoal, within the last 10 years, has so much increased, that the greater portion of the Royal forests present now but open wastes, where once majestic oaks, elms, beech, fir, and other useful trees for building and fuel, raised their lofty heads and well spread branches. Both coal and wood are extremely expensive in France, which cannot even at present produce a sufficient quantity of either without importing large quantities of the former from England and Belgium annually for her steam vessels, forges,

and other purposes, and of the latter from Germany, Sweden, and the north of Europe, where forests abound. The rapid progress making in France, both in steam navigation and railways, where coal is absolutely necessary, and the extension of mining enterprise generally in every mineral department, in working those mines which for centuries have been hidden to the industry of man, and the impetus given by the grand success in the introduction of machinery into our manufacturing districts, has produced not only for the well-being of man, but the great mercantile power of England all over the globe, compared with other nations, particularly the continent of Europe, has induced wealthy speculators and enterprising workmen to establish extensive manufactories in the leading cities of France, Paris, Lyons, Rouen, St. Quentin, Valenciennes, Cambrai, Elbeuf, Sedan, &c., worked by steam-engines constructed by English mechanists, who have imported their industry to our jealous and persevering Gallic mercantile opponents. This will naturally increase, in a most wonderful manner, the consumption of coal and vegetable fuel, which is a subject that attracts the most serious attention of the great capitalists, as the production is annually decreasing to an alarming extent, whilst the demand is rapidly on the increase. This scarcity of fuel is foreseen, and the Messrs. Rothschild, of Paris, and other eminent bankers, the chief proprietors of the Great Northern Railway of France, and others, are taking their precautions in time, by purchasing up some of the most extensive coal and iron mines of Belgium in perpetuity—as the day is not far distant, when France must depend upon this country, the north of Europe, and Corsica, for a large portion of her supplies of fuel for general consumption.

AURIFEROUS BEDS IN THE RHINE, AND EXTRACTION OF THIS METAL.

We have, in former Numbers, noticed the auriferous sands of Chili, the Brazils, Russia, and other parts of the globe; and now give the following interesting article on some of the River Rhine, as it will show that gold is to be found to some extent in the large rivers of Germany. The bed of the Rhine, at least between Basle and Mannheim is auriferous, with very few exceptions; and the spangle (*paillette*) of this metal is generally to be found in the cavities made by the water. The gravel, the most generally worked, is that deposited at some distance from the middle current, or from a sand or gravel island, which the stream corrodes. It is only in these shelves, and amongst the large gravel, at a very slight depth, that the gold is concentrated. These spangles are always accompanied with a small particle of iron, the quantity being regularly in proportion to the richness of the gold. Gold is sometimes to be found in the deposits of the old stream, forming a zone of from 4 to 5 kilometres in breadth; but rarely is the metal to be found in fine sand alone, unless there is a large quantity of gravel, which the Rhine, being a strong running stream downwards, deposits in the various hollows it forms on either side, when it naturally becomes corroded by degrees, from the influence of the water, which forms a diluvian slime or mud, called by the Germans *loess*,—which, however, appears of an Alpine nature, and, like the greater part of the flint-stone and gravel part of the river, has always shown itself perfectly sterile. The sand usually extracted and washed may be considered, on an average, of a richness of from 13,000 to 15,000 parts; but in consequence of the convulsion or movement the waters cause at certain periods to the gravel, the gold becomes concentrated at particular points in proportion of 1 to 70. The spangles, or beads of gold, are always very thin, as there must be from 17 to 22 to make the milligramme. One metre cubic (3 ft.) contains from 4500 to 36,000 of these spangles. They appear to proceed the same as gold, generally from the currents of water which descend from the Alps, and more primitively from rocks, crystallised schistose, quartzites, and amphibolite schists, from this chain of mountains. If one compares the richness of the sand of the Rhine with that extracted in Siberia or Chili, it will be found that it is far inferior in yield to that of Siberia, which gives at least five times more than those of Chili, full 10 times more than the most productive gravel of the Rhine. The comparative richness of the sand extracted in the three countries, is in proportion of 1, 10, 37. In Siberia they regard as not fit to be worked those sands that only contain 0.000001 parts, which, however, is equal at least to 7½ times the sand of the Rhine newly washed. There is a very great similarity in the qualities or yield of the gravel and sand of the Rhine, and the Edder in Westphalia. Although the returns of the bed of the Rhine are comparatively small, the total quantity of gold embedded in this gravel is considerable. As before stated, in a cubic metre of common gravel, weighing 3600 lbs., is contained 0.146 parts of a grain of gold. The auriferous gangue or bed comprised between Rhinau and Philippsbourg—4 kils. in breadth, and 125 in length, and 15 ft. in depth—contains, therefore, 71,832 lbs., which quantity of gold may be thus subdivided:—Department of the Lower Rhine, 27,755 lbs.; Grand Duchy of Baden, 35,896 lbs.; Rhenish Bavaria, 8,191 lbs.; which, at the rate of 127*l.* 12*s.* per kil. (2 lbs.), will give a total sum of 4,560,000*l.* In forming a proportionate comparison between the above returns, it will appear that the bed of the Rhine between Basle and Mannheim has a total richness of 104,000,000 lbs. of gold. This considerable quantity of gold, if the annual extraction is only of the value of about 1800*l.*, is, however, but 2½ in proportion to the production of northern Asia (Russian empire) in 1843. It must be remarked, that more than two-thirds of the gold is disseminated among gravel, covered over with cultivated lands,—and the washing of the produce of the river confines daily more and more the exploring of the land soil. By the present process, a washer gains on an average from 1*s.* 3*d.* to 1*s.* 8*d.* per day,—and accidentally sometimes as much as 8*s.* 4*d.* to 13*s.* 6*d.* There are many parts of this operation which could undergo a very great improvement, as the washing of the gravel and sand at present is done by manual labour, when at but a short distance a mill could be established, the wheel of which might be propelled by a plentiful supply of water always attainable from the Rhine, to wash the missiles, and clear the gold from the superfluous matter: the outlay of this improvement would be very trifling; and there would not only be a great saving of gold, time, and labour, but expenses which are now incurred by the present system, to a very great and unsatisfactory extent. A dragging machine might be so constructed as to raise, by a propelling power, the rich surface of the gravel and sand from the river, and convey it at once to the washing bins and machinery at the mill. Many improvements are in projection in this important industry, and particularly in the constructing of a novel washing machine, which will no doubt be generally adopted some years hence, not only in Europe, the Brazils, and Chili, but the entire of South America, and every country where auriferous beds exist, when its efficiency has been satisfactorily proved.

METALLURGIC INDUSTRY OF AUSTRIA.—This is one of the richest mineral empires of the north of Europe, abounding in metals of nearly every description; fuel, both coal, wood, and charcoal, to a very great extent; salt; earth or clay, for the manufacture of porcelain, and other potteries or wares; pyrites, nickel ore, and other mineral productions, but seldom met with in any other country. The following is about the annual average of each:—Gold, 3800 lbs.; silver, 54,000; tin, 190,000; mercury, 370,000; cobalt and nickel, 240,000; antimony, 770,000; zinc, 1,000,000; copper, 4,000,000; lead, &c., 16,000,000; iron and cast metal, 306,000,000.

MINING IN AMERICA.—We have been favoured by a correspondent with the following extract of a letter just received from Col. Charles L. Schlatter, U.S. engineer, to the president of the Empire Mining Company, Wall-street, New York, dated near Fort Wilkinson, Copper Harbour, May 14:—"The news from the Eagle River, the Cliff Mines, and the Pittsburgh Company, is so favourable as to be scarcely believed; the ore out in large quantities estimated as worth one million of dollars. Masses of native copper, so far uncovered as to show from 10 to 20 tons, have been showing themselves in several mines. Native silver is found in some veins in masses weighing from 1 oz. to 5 lbs. You will have heard ere this of the arrival of 60 tons of silver ore from the Pittsburgh Company. They have several hundreds of tons (308) selected specimens ready to barrel as soon as they get the barrels."

THE SALT TRADE.—Extract of a letter received at Lloyd's, from their agent at St. Ubes, dated June 6, 1846:—"I have to report that the rest of the salt appointed to the loading of foreign vessels has just been distributed to those now here. The large number that have unexpectedly crowded to this port, of which there is no example, have totally exhausted the stock appropriated to them; the salt board has, however, made inquiries to ascertain the exact quantity that exists in the pans, and there is every probability that they may have to spare, to foreign ships, from 12,000 to 14,000 tons, but if they continue to come in crowds this quantity cannot last until the new batch is ready, which seldom is fit for shipment before the middle or end of July. The price fixed and agreed by the owners of the pans and the merchants many years since still continues unaltered at 1 dol. 500*f.* my., weighing about 14 cwts."

IRON SHIPS.—During the last week three iron vessels were launched from the building yard of Mr. Coutts, at Walker—a large brig and two schooners. Mr. Coutts has also a number of other vessels nearly ready for launching on their destined element.—*Gateshead Observer.*

METALLURGICAL TREATMENT OF LEAD ORES—No. VI.

Treatment of Galena on the Slag-Hearth.—The slag-hearth is employed in the same manner as the ore-hearth for the treatment of roasted galena. The difference in the two furnaces consists essentially in the temperature, which on the slag-hearth is greatest; so that poorer ores—ores containing much more earthy and silicious matters—can be smelted. The roasting of the ore is conducted as for the last furnace, the stirring also is the same, that which takes place in one furnace takes place in the other. It is proved, however, that the more rapid fusion, which takes place on the slag-hearth, requires that the roasted ores be less rich in sulphate than those roasted for the ore-hearth. The following is an example of this kind of operation—an operation followed at Villefort, and which is somewhat remarkable:—The ore, which is very argentiferous, is washed imperfectly, so that nothing may be lost. The schlichs contain about—Galena, 40; pyrites, with a little blende, 10; earthy gangue, 30=80. About 14 cwts. of this schlich are placed in a reverberatory furnace, where they are first roasted, and then fused. The first epoch of the roasting lasts about seven hours, the schlich is heated to redness, and stirred every half hour; the second epoch lasts five hours, the heat is increased so as to attack the last portion of sulphurets; lastly, the fire is violently urged for three or four hours, and, when the whole mass is in full fusion, it is run on the floor of the smelting-house, and water poured upon it to solidify it. The fused substance has about the following composition:—

Sulphuret of lead.....	4.5	0.0
Sulphate of lead.....	19.0	11.0
Oxide of lead.....	51.0	64.3
Oxide of iron.....	10.2	9.0
Oxide of zinc.....	1.4	1.0
Lime and magnesia.....	2.4	3.2
Alumina.....	0.5	0.5
Silica.....	6.4	12.2
Sulphate of baryta.....	1.6-97.0	1.8-100.0

This is a mixture of subsulphate of lead, and subsilicates of lead and iron—in this operation, it is clear, the object is to procure a body free from sulphurets and sulphate. It is, then, on the time of fusion, that the whole success of the operation depends. If it were produced too late, a large quantity of combustible would be used, and a considerable amount of sulphate produced, and too soon, a large quantity of sulphurets would remain. But between these two limits a multitude of compounds may be formed, capable of leaving an oxidised residue, by giving much pure lead. M. Berthier proposes to have this end in view, for not only would it have the advantage of separating a considerable quantity of lead, but of leaving a residue free from sulphate. This roasted schlich is then treated on the slag-hearth, where lead, very few matters, and a slag, containing hardly any lead, are obtained. The matters, which are very rich in silver, contain—Sulphurets of iron, 3; sulphurets of copper, 4; subsulphurets of lead, 90; sulphurets of zinc and antimony, 3=100. Among the slags there are some which are re-treated on the slag-hearth: they are formed of—Silica, 40.8; oxide of lead, 8.8; protoxide of iron, 27.0; lime, 10.0; baryta, 7.6; alumina, 3.8; magnesia, 1.7=99.7. The ordinary slags contain but 3 per cent. of lead.

Treatment of Galena by Iron.—The general process consists in transforming the sulphurets of lead into metallic lead and proto-sulphurets of iron by the addition of very ferrous substances. There are two modes of procedure dependent on the nature of the combustible and kind of furnace.

Upright Furnaces.—The employment of upright furnaces has been the object of many carefully-conducted experiments at the mills at Tarnowitz. Wood, charcoal, coal, and coke, have been compared, which last combustible has furnished the best results, and has, in consequence, obtained the preference. These experiments, made in a high furnace, 20 feet in height, were executed on the large scale, and deserve, in consequence, much attention. The following are the results obtained by the employment of charcoal and coke:—

Fusion with Wood Charcoal.—From 34 tons 8 cwts. of ore. Products:—16 tons 17½ cwts. of workable lead; 12 tons of matters, yielding, by assay, 4½ tons of lead; 4½ tons of impure slags and refuse of furnace, containing 1 ton 6 cwt. of lead—in all, 22 tons 8 cwts. 84 lbs. of lead, of which 16 tons 17½ cwts. were produced in first operation. Fuel consumed:—3850 cubic feet of wood charcoal; 5 tons of iron. Time consumed:—360 hours.

Fusion with Coke.—From 34 tons 8 cwts. of ore. Products:—22 tons 1½ cwt. of workable lead; 8½ tons of matters, containing, by assay, 1½ ton of lead; 5½ tons of various products, containing 12 cwt. of lead—in all, 24 tons 3 cwt. 56 lbs. of lead, of which 22 tons 1½ cwt. were produced in first operation. Fuel consumed:—706 cubic feet of coke; 5 tons 3 cwts. of iron. Time consumed:—264 hours.

Coke, which produces the greatest heat, causes a more rapid fall of the charges in the furnace, and, at the same time, a more perfect liquidity of the slags—the result of which is a more rapid and complete separation of the metallic lead; also the quantity of lead produced immediately is more considerable, whilst the matters are less in the same proportion. When the ferruginous matter contains a considerable quantity of lead, it is a proof that the operation has not been well conducted. When the fusion with coke is made in suitable furnaces, the matter is so poor that it cannot be treated by itself with advantage; but can only be smelted when added to schlichs, which contain less metal than the rich ores. The mean richness of these matters is about 2 per cent. of lead. The actual process of smelting varies according to the state and richness of the ore. Rich ores are fused by coke, with the addition of from about 12 to 14 per cent. of iron scraps, 12 of forge scoriae, and about 36 of pure slag from a previous operation. The furnace is 4½ feet high, 18 inches wide, and 8 feet deep; the sole of the furnace is lined with charcoal powder, and has an inclination of 20 inches throughout its whole length. The charge is composed of—5 tons of pure ore; 13 cwt. of iron scraps; 12½ cwt. of forge slag; 1½ ton of the slag of a previous operation. The consumption of coke is 88 cubic feet, and the operation lasts from 16 to 17 hours. The products are—3 tons 13 cwt. of lead; 1 ton 2 cwt. of matters, composed, for the greater part, of sulphurets of iron, and containing only 1 or 2 per cent. of lead (these are thrown away as useless); 5 cwt. of dross, fragments of furnace skimmings, &c.; 2½ tons of slags. The success of this mode of treatment depends on the rapidity of the fusion, and, consequently, on the elevation of temperature. Great care must be taken that the blast meets with no obstruction on its passage to, or delivery into, the furnace. Schlichs are treated in an analogous manner, only, on account of their impurity; they require a slower treatment, which renders certain modifications necessary. They were formerly smelted in furnaces about 20 feet in height, but similar in other respects to the preceding; well-conducted experiments have shown, however, that the best height is 11½ feet. The mixture is composed of—5½ tons of schlich; 10½ cwt. of iron scraps; 1 ton of fiery slags. Products of the fusion of pure ores:—dross, 1½ ton; slags, 7 cwt.; matters, 1½ ton. The addition of this large quantity of slaggy matter is intended to facilitate the fusion. The operation lasts 48 hours; the fusion is conducted slowly, so that the heat is not strong in the neighbourhood of the tuyere, and the throat of the furnace is quite dark. In this operation 158½ cubic feet of coke are consumed, and 2 tons 2 cwt. of lead produced; besides this are found a poor matt, which is rejected, and a slag, to be employed in another smelting.

Treatment in the Reverberatory Furnace.—The process just described is considered by German smelters to be more advantageous than that which has been employed in the mills of MM. de Blumenstein, in which a reverberatory furnace, in conjunction with iron, is in use. The mode of procedure, however, is very quick and simple. On the hearth of a reverberatory furnace, heated by coal, 1 ton of ore is placed after the fire has been kept up for some time, and, when the whole is in a liquid state, 5 or 6 cwt. of old iron is added by degrees. The whole matter is well agitated, and sulphurets of iron soon appear—it floats on the surface, whilst the pure metallic lead runs off below into a proper receptacle. The fusion lasts from 15 to 18 hours, and from 8 to 11 cwt. of lead are produced, with matters, which are thrown away. By this process 5 tons of lead may be procured in 8 or 9 days, by the consumption of 9½ tons of small coal—this process is employed at Poulhauc. The charge is made as follows:—4 cwt. of Poulhauc ore; 1½ cwt. of the argentiferous red earth of Huelgoët; ½ cwt. of "cupel bottoms"; 1½ cwt. of old iron. This mixture is spread out on the hearth of a reverberatory furnace, and heated to fusion—lead matts and slag are obtained. The matters contain—Proto-sulphurets of iron,

* The whole, or a part, of the ore are employed in the following operation.

91; sulphurets of lead, 9=100. The slags contain various silicates. The following is M. Berthier's analysis:—

	Compact Slag.	Crystalline Slag.
Silica.....	29.6	35.6
Protoxide of iron.....	65.0	41.8
Oxide of zinc.....	1.0	20.0
Oxide of lead.....	2.5	0.4
Alumina.....	1.0	1.0
Lime.....	1.0-100.0	1.0-99.8

The peroxide of iron contained in the red earths passes to the state of protoxide; the oxide of lead in the cupel bottoms is converted into metal; and the iron becomes sulphurets—such are the desulphurating agents, which reduce galena to the metallic state.

[To be continued in next week's Mining Journal.]

THE ZINC MINES OF GERMANY.

We have, on various occasions, given publicity to the satisfactory progress which has been gradually making by the Vieille and Nouvelle Montagne Zinc Companies, and the newly constituted Zinc Mining Company of the Grand Montagne, all situated in Belgium, partly on the frontiers of Prussia. The rapid increase in the consumption of zinc, within the past 10 or 12 years—the consequent extraordinary development of mines of that metal, formerly looked upon as worthless—and the progress made in working mines of the more useful and abundant metals—has diverted the attention of many from the discovery of the precious metals, and given rise to much more legitimate enterprise and sounder speculation. Russia has become a competitor with the Americas, for the production of gold; and the proprietors of the lead mines of Spain, who, 20 years ago, looked with fear and jealousy on the working of similar mines in Germany, are now threatened with rivalry by the opening of new lead mines in the western provinces of the United States. Silesia, formerly almost exclusively in possession of the manufacture of zinc, has witnessed the successful competition of Belgium; and again the owners of the zinc mines of that kingdom will witness the effect of increased returns from a new centre of production. The metalliferous deposits to which we allude, are situated on the right bank of the Rhine, particularly in the provinces of Tannus and Vesterwald: this locality is already celebrated for the manufacture of cast-steel, but the working of the blende, which exists in great abundance, will give still greater importance to the district, which has for some time attracted the attention of mining engineers, and particularly Amédée Burat, who has long watched the progression which has been gradually leading to a complete alteration in the working of the mines of Germany. The strata presents three distinct series of metalliferous veins, distinct in their composition, and probably widely different in age:—1, sphathose iron, intermixed with galena, blende, and copper ore; 2, blende and galena; and 3, copper ore, intermixed with quartz. Several of these veins have, to considerable extent, been worked—of which may be mentioned the sphathose iron, from which the east steel is produced in the district of Siegen; argoniferous galena, from the mines between Coblenz and Cologne, particularly those in the neighbourhood of Ansbach and Auztau, in the vicinity of Ucherath, at Oberhoff and Holzappel, in the province of Nassau; and the copper mines of Rheinbreitbach. The quantity of ground, however, yet opened is very small, compared with the extent of the mineral deposits, which may partly be appreciated from the remains of ancient workings. Indeed, there are few mining districts which show so many old workings as the provinces on the right bank of the Rhine—arising, doubtless, from the great number of veins, the existence of which has been known for centuries. What has probably greatly tended to the abandonment of these mines, is the great distance between individual mines, preventing them being worked on what is called the German system—viz.: cutting galleries through many mines for even leagues in extent, and thus unwatering all by one system of working, in the expenses of which all participate—as is the practice in the mines of Hartz, and in those also of Saxony. The German miners appear to have had an inexplicable repugnance to the steam-engine, as appears from the many hundred fathoms in extent to which the galleries are driven, to take advantage of the lowest valleys for unwatering the mines, especially where the vein is known to be of sufficient value. By the use of the steam-engine, however, these mines may be worked to any extent; and the blende, which they contain in large quantities, and which was formerly useless, will now become an item of considerable value. Zinc, although comparatively a new metal for industrial purposes—the produce from the calamine beds of Silesia, and the province of Liege—has now reached 30,000 tons per annum; of which about one-half is consumed in France. Its price, instead of becoming lower, in consequence of the numerous establishments, appears to have a tendency to rise—that is to say, the consumption progresses more rapidly than the manufacture.

The treatment of blende has long been matter of experiment, without obtaining satisfactory results, as the smelting had always been expensive and incomplete. About two years ago, however, England imported a considerable quantity of this blende from Rhenish Prussia, which excited the attention of the miners of the country; they were, therefore, anxious to know the process employed in England, and they at last succeeded, particularly at the furnaces of Stern, near Linz, in manufacturing zinc of that quality suitable for all purposes, if fuel could be obtained at a low rate. From that period there began to be formed various companies, for directly working the beds of blende which had hitherto been neglected. This grand undertaking was encouraged by the enlightened counsel of Messrs. de Dechen and Noggerath, which gave a stimulus to work them, and that under very favourable auspices. The facilities of travelling are daily increasing throughout the whole country, and particularly the means of conveying in every direction the necessary fuel for the treatment of ores; one great advantage to enterprise is, that labour is reasonable, the workmen frugal and intelligent, and there is no doubt of complete success, if the working of the mines is conducted with proper judgment and a spirited economy. The question may thus be summed up. Calamine averages at the rate of 20 to 25 per cent. of metal, requiring only a slight roasting, and, perhaps, afterwards treated by dry distillation, at an average expense of 9l. 12s. 6d. per ton of manufactured zinc. Blende, however, is now obtained, yielding from 50 to 65 per cent. of zinc—double that of calamine. The process adopted in its treatment is still uncertain as to its expense and return; but, as it gives double the produce, it has the advantage over calamine, not only in weight, but doubling the profit. If, therefore, the blende labours under more difficulties, compared with calamine, in the metallurgical operation, which consists in purging it of the sulphur, the manufacturers have a large scope, it being twice the yield of the latter, in carrying out the operation. At the furnaces of Linz, where the zinc is made from blende, they have taken the advantage of making a large profit from the sulphuric acid, which escapes from the smelting, or roasting, ovens.

In first looking at the subject, it would appear impossible to produce blende at so low a price as calamine, either in Silesia, or at the Vieille Montagne; but in the greater part of the mines the blende is only an accessory. It is merely an addition to the argentiferous galena, or copper pyrites; and many works, such as those of Oberhoff, Holzappel, and Ucherath, have completely thrown it out. A great many washers of minerals have obtained large quantities of blende, but they do not much appreciate it, particularly in the Rhenish provinces, and at the mines of Hartz (Laurentthal), which have for centuries been accumulating an extensive reserve of blende—the same may be said of different parts of France. The progress in the improvement of metals has made so rapid an advance within the last few years, that there is very little doubt, the treatment of blende will compete with that of calamine, which will have some difficulty to stand against it. There is no doubt, that the Vieille and Nouvelle Montagne Zinc Companies, and a few others, may compete with it, being large capitalists; but those mines which are worked at an enormous expense, the ore of which is not so productive, must eventually be extensive losers.

There is very little doubt, according to the quotations of the metal markets of England, France, and the continent generally, that zinc will eventually be sold at a much lower price than lead, from the facilities they have in Belgium, of extensive beds of calamine, and in Prussia and Austria, of working it to great profit, added to a plentiful supply of fuel—coal, charcoal, or wood—which is to be obtained nearly on the spot of the mines. This discovery of extensive mines of blende, on the northern side of the Rhine, will lead to great enterprising speculation in the mineral productions of the country, and create an interesting revolution, in course of time, in the metallurgical industry of the kingdom, as zinc promises to become still more extensively employed in various purposes to which it can be applied—the number of which are daily increasing, from the clearness of this peculiar metal, its freedom from oxidation at low temperatures, its facility of working, and its low cost.

Original Correspondence.

THE LEAD TRADE.

Sir, The letter from "A Company of Miners," on the present state of the lead trade, inserted in your Journal of the 13th inst., comprehends, within the smallest possible space, the greatest amount of ignorance and misrepresentation of the subject that designing and selfish personal objects could suggest. Having some knowledge of the metal market, and especially of lead, I read this effusion with unmixed astonishment. After perusing that this party are not "A Company of Miners," but smelters—else they would have adopted a directly opposite line of argument, and exerted all their power and influence to keep up, and enhance, if possible, the price of lead ore and lead—not to run down and depress it—I ask your permission to refute, by facts, the entire contents of this report of the lead trade. You are told that, notwithstanding your important intimations as to the value of lead ore, and lead in general, "latterly, you hardly seem well informed, or you would have communicated that both are greatly fallen in price."—"Government contract taken at a price little, if any, above 17l. per ton."—"Lead has been offered, in the stream of the Thames, for the same price, discount for cash."—I am certain these are three distinct and consecutive misrepresentations. Firstly, it is incorrect to assert that lead (ore, the raw material, as any child knows, is ruled in price by that which the manufactured article, lead, is selling at in the market), has greatly fallen in price. Ten days prior to the publication of this letter, the greatest northern smelter made a large sale of refined and common pig-lead—the former at 21l., and the latter at 19l. per ton; and not one farthing less will he, or the other leading smelters, take, than these prices at the present moment. Secondly, the Government do not dabble in contracts—the quantity consumed at the naval depôts, &c., being so trifling; but admitting they did contract, they could not get a ton of English common lead under 19l. of the leading merchants, either in the Thames or out of it; and they would scarcely be so unpatriotic as to buy any Spanish or American. Apropos of the latter—I had it from the largest lead firm in the City only on Tuesday last—that having seen a newspaper notice of some American lead being for sale in Liverpool, at 17l. 10s., a letter was dispatched to their branch firms in that place, requesting the whole of it might be bought at that price. An answer was returned, saying that no purchase could be effected—the party offering shuffling for a higher price. But the best of the joke is, that it was soon found out there was no American lead for sale then in Liverpool. Thirdly, I give not the least credit to the report of lead being offered in the stream at any such price as 17l. per ton. It is not English, nor Spanish, neither is it American, for the latter was selling in New York very recently at 22l. per ton! This "Company of Miners" is a company of smelters; and adopting the *ruse* practised upon all holders, or producers of lead ore, they try to run down the price of lead—prove that the market is in a drooping state—that our ports are all glutted with imports of lead and lead ore from Spain and America, and no one knows from where besides. I know one district in the north in which this knavish system is fully carried out, when the smelter fixes his eye upon a fine heap of lead ore: so it is in the present instance. These miners, *alias* smelters, are in this predicament: they are in want of the raw material, and hence the awful fall in the price of lead. I have, since Monday, called at the offices, not of the brokers, but of the principal lead merchants, possessed of large smelting works in Wales and the north of England, to make inquiry as to the cause of this frightful fall, so sudden and unexpected; and when I showed them the missile in your columns, from the "Company of Miners," *alias* smelters, they expressed great surprise at it. "Our price is 21l. for refined, and 19l. per ton for common pig lead," was their reply.

A certain celebrated knight, being alike unknown to me, I, therefore, pass over the "Company's" remarks upon both—observing, however, that I am now convinced this company are smelters, not miners only.

The "Company" conclude their letter thus—"We are, however, aware that at this time there are considerable importations of lead from Spain and America, and ore from all parts, even the most distant,—so that, we fear, there will be more of both lead and silver, than the market can take at the present prices;"—"and wish to know [the wish is father to the thought]," from valuable correspondents, to what price it may reasonably be expected lead can fall,—in order that we, as miners, may have some guide in our proceedings." Really, gentlemen of the "Company of Miners," you appear to know enough already about lead and mining; for I verily believe the information contained in the above extract was known only to yourselves, previous to its publication in the last week's *Mining Journal*. Did you ever see an official document—(House of Commons)? If not, call at the State Paper Office, Great Turnstile, Holborn, and you'll get as much information as you like, relative to copper, iron, tin, zinc, and lead, for twopence. The returns for lead, retained for home consumption, imported from all parts of the world, will, at one glance, show you the contemptible nature of the bugbear that you have conjured up in your imaginations, as to the British market being glutted by foreign produce. The following statement, copied from returns annually moved for in the House of Commons, by Sir Charles Lemon, Bart., Mr. Pendarves, and others, ought to satisfy the most obtuse mind upon this point:—"Quantities of all foreign lead, retained for home consumption in the following years:—1829: 52 tons; 1830: 11—1831: 27—1832: 168—1833: none—1834: 25—1835: 2—1836: 6—1837: 10—1838: 85—1839: 12—1840: 7—1841: 35—1842: 54—1843: 108—1844: 48½ tons—1845 (not made up yet by House of Commons)." I would give of the prices of lead from 1800 to 1845, but I will, however, fear I have already trespassed too far upon your space. I will, however, give you the averages (of 10 years each) for 44 years:—from 1800 to 1809, 27l. 14s. 6d.; 1810 to 1819, 23l. 6s. 6d.; 1820 to 1829, 20l. 7s.; 1830 to 1839, 16l. 11s.; 1840 to 1843 (four years), 18l. 4s. The highest price lead ever reached was in 1806, when it sold at 35l. 12s. 6d. per ton; and the lowest price in 1832, 11l. 10s.; and in 1833, 12l. 10s.; in 1844, 17l. 10s.; 1845—refined, 21l.; common, 19l.—the present price.

Gentlemen of the "Company of Miners," dismiss all your fears, in respect to the price of lead. It is firm at the present period, and thought by those best able to give an opinion on the subject, that will not give way. We have nothing to fear from Spain or America in our home market; and, as to our exports, they are more than double those of the former, and nearly double those of the latter—this embraces all the ports in every part of the globe. The population of the United States increases so rapidly, that however rich and productive their mines may become, the home consumption will be equal to the supply. And I do not think South Australia (the most distant) will affect us much as yet for a century in the lead market: that rising and promising country will be more prolific in copper than in lead ore. I have to apologise for making this letter so long.

Pimlico, June 18.

THE LEAD TRADE.

Sir,—I can inform the "Company of Lead Miners," whose letter appeared in your last week's paper, that they may rest satisfied, on the word of a knight, that the price of lead ore shall not go down this year. A little difficulty as to how to dispose of the immense profits made last year, amongst the numerous partners in the great lead house, has prevented their wonted activity, so that the price of lead has fallen. The inveterate knight has not been able to make good his intention of breaking all the lead smelters; but now let them beware—he takes the field next month, armed with the power of a "patent stag plan," which has been erected at a cost of about 20,000l., and (they say) will enable them to detain every particle of lead 20,000l., and (they say) will destroy the vegetation around, which formerly escaped in quantity, that not a single valuable discovery has emanated from any of the very scientific partners in the house; they are, however, the most clever in the trade in making bad debts, both in town and ever. Some credit may also be given them for getting out of the bog at so small a loss of about 70,000l. This will soon be made up by the patent stag plan, though I cannot forget *Punch* and his Stock Exchange tags, and trust the knight will not allow the smelters to become the hounds, and ultimately chase him.—W. W. WILLIAM: Flint Castle, June 15.

THE LEAD TRADE.

Sir,—I observe, in your valuable paper of Saturday last, the letter signed "A Company of Miners," and which is, in a great measure, correct, though I do not think the cutting house in the lead trade would take the contract at so very low a figure as you state, unless, indeed, the certain payment was the temptation. I can, however, assure the miners, that I do not see any probability of the price of lead getting much lower—say, 17l. 10s. per ton, delivered in London. I am aware that, even this week, there is less inclination to press sales; and I do not think that less than 19l. per ton would be taken for sheet lead in 5 or 10 ton parcels. I would ad-

vise miners not to let their ores be sold at the very depressed price; but rather, to hold stock until August, when the demand for sheet lead and shot will be very great. I write this with a knowledge of the information from America, where it is stated, that the produce of their mines for this year is estimated to equal the produce of England, which will exceed 60,000 tons.—P. PERRET: *Tooley-street, June 16.*

THE NEW PATENT MINE VENTILATOR.

SIR,—I observe in your last Number a communication respecting Struvé's patent mine ventilator, a notice of which appeared in the previous Journal. The writer appears to entertain serious doubts of the practicability of the invention, and wishes to hear of some instance of its successful application, which would convince him that it is something more than merely a "scientific whim." No machine on a large scale has as yet been made; but it is probable that one or more will be constructed immediately on the inventor's return from the continent, where his professional engagements at present detain him. A bare inspection of the model would, I believe, at once convince a practical man of the perfect practicability of the invention; and but little calculation would be required to show, that the assumed capabilities of the machine, and the advantages which it is asserted would result from its use, are by no means overrated. The inventor is not a merely theoretical man, and it is precisely his position as "consulting engineer," of several collieries in South Wales, that has been the means of forcing the subject of ventilation so strongly on his attention, and has led him to the invention of this machine, which bids fair, where fairly applied and used, to do away with the causes of that appalling destruction of human life, of which we have had, of late times, so many dreadful instances. *Neath Abbey, June 15.* EDWARD SOTHILL.

RAILWAYS AND CARDIGANSHIRE MINES.

SIR,—As the railway bubble has burst, and as it is now apparent that the capitalist can only purchase in an old line so as to pay him 4 or 5 per cent., and that only so long as the absence of competition continues to secure a monopoly to the lines now in action, it may, perhaps, be permitted to write in recommendation of mining, as an investment of capital. It is said, that mining is a lottery. Do not speculation, competition, and political change, make everything subject to vicissitude? Ask the Manchester cotton spinners, what have been the changes from 1835 to 1845? Was not a cotton factory erected by Mr. Aaron Lees, of Manchester, at a cost of 135,000*l.*, sold, previous to the opening of the China trade, for 35,000*l.*— whilst the success of that trade restored it in the interim to nearly its original value? What constitutes the lottery of mining? In a great measure, the absence of geological skill, the rash outlay of capital without the protection of science, or the too feeble use of it when outlay and perseverance are warranted by rational conclusions. I write this from a county teeming with mineral wealth; and yet, strange to say, that, whilst thousands have been squandered in North Wales, the mines of Cardiganshire show, in the Ticketing Paper, only about half-a-dozen mines in action.

I boldly assert, that no mine in Cardiganshire, properly worked, has failed to return high mining profits. If parties throw capital away in an ineffectual revival of exhausted sets, instead of seeking fresh ground, or in sinking shafts on the tops of mountains, instead of seeking to reach the veins in the valleys below, they have only themselves to blame, that they do not mine according to the conditions of the country. I will endeavour to show what these are.

The silver-lead veins and the lead veins of Cardiganshire generally lie in a direction (the course of the vein, as it is called) from north of east to south of west, and preserve throughout a great uniformity of parallelism; they are commonly called east and west veins. Some veins are thrown up to the tops of the mountains, but they are denuded by the streams flowing from the Plinlimmon Range to Cardigan Bay, as the streams cross the veins in the "cwm," or valley. It is in these cwms that the legitimate exploitation should take place, whether it is by driving a level into the womb of the adjacent mountain, or by sinking a shaft, so as to secure a greater depth, and driving from the shaft levels in the veins, as at Cwm Ystwyth, Goginann (or rather "Cwm" Goginann), Cwm Sebon, &c. The kyll formation in which these veins are placed is a steady formation. The veins have very little water in them, and that is at present universally raised by water-power, and the ores are crushed and dressed by the same power; but sound economy will shortly dictate the use of steam as an auxiliary, to prevent the stoppage of operations in severe frost, at a trifling and temporary cost of fuel.

The silver-lead veins incline about 1 in 6 from the perpendicular, but they are more perpendicular and richer as they descend. The ore is not distributed throughout the vein, but is in "locks," or swellings, with intervals of blank ground; the miner stops the ore ground, and avoids the blank. The Llanvair has 80 ozs. of silver to the ton; the Goginann from 28 to 30 ozs.; the Cwm Sebon from 32 to 36 ozs.—the two latter are the only mines in the district, called the "Welsh Potosi," at present producing. In driving from the "cwm," where the vein is generally small, into the womb of the hill, the miner has always been rewarded by meeting with large deposits of ore, as at Cwm Ystwyth, the Lisburne Mines, and the Goginann. The Cwm Sebon, although going down in a rich vein, has not yet extended her levels far into the hills east and west of the shaft. Royalties vary from $\frac{1}{4}$ th to $\frac{1}{2}$ th. Labour is not so dear in Cardiganshire as in England. The abolition of corn-law protection will diminish the price of mining labour very considerably, and place the British mines on a par with, if not on the vantage ground, as compared with foreign mines.—GEOLOGIST: *Cardiganshire, June 6.*

ON LEVELLING—RAILWAYS AND MINES.

SIR,—It may be acceptable to some of your practical mining and railway correspondents and readers, to receive the method in general use for railway and other extensive levellings. The staff is divided into feet, and every foot subdivided in 10ths, and every 10th into 10 parts—so that every foot is divided into 100 parts. The numbering, of course, is from the bottom upwards; the staff is about 25 or 30 feet high, without slides, as the numbers are read off with the telescope of the spirit level, and, with a good instrument, in clear weather, the smallest division can be distinctly defined at nearly a quarter of a mile distance. In going over a line of country, the back and foresight are always used, whereby the curvature of the earth is negated or balanced. The registry, or field-book, is divided into seven columns, headed as follows:—*Backsight, foresight, fall, rise, real level, length, remarks.* The following is a specimen of nearly half a mile of levelling, and which will show the nature, as well as the simplicity, and excellency of the system:—

Back.	Fore.	Fall.	Rise.	Real levels.	Length.	Remarks.
18-42	28-63	7-21	...	21-21	6-42	
7-96	22-46	14-90	...	22-11	9-54	
2-94	18-74	15-80	...	37-91	18-75	
4-13	26-19	22-06	...	59-97	16-12	
3-27	31-49	28-22	...	88-19	19-46	
26-15	7-61	...	...	104-54	22-70	
33-42	9-42	...	...	96-00	25-15	
36-11	30-74	...	...	15-37	22-74	
4-19	26-25	22-06	...	59-34	30-82	
6-64	30-00	24-36	...	74-70	33-66	
28-74	14-88	...	...	60-84	37-23	
172-57	233-41	134-61	73-77			

To prove that the work has been carried out right, deduct the sum of the rises from the falls—that is, 73-77 from 134-61, will leave 60-84 fall, which agrees with the termination in the column of real levels. Also, by deducting the sum of the backsights from the sum of the foresights will give the same result, which demonstrates the correctness of the work. The learner will observe, that the spirit level was carried in advance of the starting point; and the number read off from the staff, after the level had been adjusted, was 18-42 (or 18-42 feet); the line was then measured from the start to the second place of the staff, beyond the levelling instrument, and found to be 6 chains and 42 links, and the observation on the staff found to be 25-63—therefore, as the foresight exceeded the backsight, it demonstrates that the difference was "fall," or that it was a down-hill course. The first five drafts were all on declining ground, and, consequently, in carrying out the real levels, they were successively added; but the sixth draft gave a "rise" of 18-54, and which, of course, had to be deducted. This is enough to explain the system of carrying out the real level. By this method no regard is to be paid to the height of the spirit level, which is always equalised. A section of the line is readily made from the field book. This method of levelling may be applied to mining purposes, for bringing home long leats, or water-courses, with this difference—that if a dead level

is required, the second position of the staff must be brought to agree with the first, and, should any gradient be required, it can be readily applied. *Callington, June 11.* JOHN BUDGE.

MINE SETTS.

SIR,—Interest, though lynx-eyed, is, nevertheless, very short-sighted; and, therefore, the terms on which mine setts are held still militate considerably against mining enterprise. The consideration of an idea or two on the subject may not be unimportant. In law and equity, as in philosophy, it is a maxim, that "what has happened once will happen again under the like circumstances." The present forms of our setts may, therefore, be said to be part of the wisdom of experience, although it is quite possible that some parts may have become comparatively obsolete; but with respect to the general precedent, however, it may be said, that it is sufficient for all necessary purposes. But why should the terms of years for which the grants are made be so very short as 14 or 21? Mining, like science in general, must, from the nature of things, be essentially progressive; and, therefore, new stipulations are required from time to time at almost every renewal, for which progression alone can be an adequate reason, as, though "a fellow feeling makes us wondrous kind," the benefit of a successor to a stewardship, or the probability of the same individual pocketing the fees 20 years hence, cannot be an adequate motive, especially when the chances of renewal on new terms are considered, as, in the case of every other lease, the charges for the instrument might bear a proportion to the term, &c. Mine setts might be granted for terms of 999 years, or with a covenant for perpetual renewal; according to circumstances, the drafts of the renewals to be settled by the secretary to the vice-warden, after hearing both parties in case of dispute. These observations are caused by the fact, that several setts have lately fallen in hand by effluxion of time, just as the mine was in working order, and new grants refused. I speak not as a revealer of secrets, but of what I have heard from the press and the public. *Penzance, June 11.* A. T. J. MARTIN.

TUTWORK AND TRIBUTE.

SIR,—One of the glories of the constitution of old England is "freedom of sentiment;" and it is the privilege of every British subject, to express his opinion freely, without hazard of being "called in question." And, indeed, it is this liberty of speech that has been the mighty machine which has brought about nearly all the great reformations, revolutions, and improvements in the land. With your leave, sir, I intend, in this paper, to give my views on the almost universal practice of setting the work in mines by the job—or, as it is expressed in mining language, "tutwork and tribute;" and although this system has a powerful advocate on its side, called "antiquity" or "time immemorial," yet I think I shall succeed in proving, to all candid and unprejudiced men, that it is a bad practice, and operates injuriously to all parties concerned in mining.

First, I will observe, that there is no precedent of setting *piece-work*, that can be brought to apply as an excuse or an authority for mining, because of the uncertainty that lies a-head, or out of sight: for instance, the state of ground in a level may be such as to justify a captain in setting, and miners in taking, it to drive at 30s. a fm., when, by a single foot in advance, it may so change, that 10*l.* per fm. would be but a fair price, and the inverse change from "harder" to "easier" ground may occur in the same short space. Hence, all the talk we hear of captains judging of the fair price for driving a fathom of ground is *all a farce*, or yet of divining what is a fair tribute for working on a course of ore. Practical men well know that captains determine the price of a tribute pitch or tutwork bargain, for the coming month, more by the cost-book, or the men's earnings of the preceding month, than by their judgment, or the appearances "in sight;" and if the accounts show that a pare, or company, of men have earned something above ordinary wages, the price fixed for the next month will be sure to be less than the appearances would justify. Discerning men will see at once how this system will operate. If men find the ground has changed in their favour, they will say—"We must hold back; for if we work hard, and spend or break all the ground we can, we are sure our price for driving will be cut next month." Again, if the ground changes hard against them, they have the same inducement to slack the work, by reasoning thus—"Work as hard as we will, at the present price, we cannot get 10s. a month,—and the less ground we break, the better price we shall have next month." The evils attending this practice of setting work by the job in mines are numerous:—1st. It is the main source of that bad feeling which so widely prevails between agents and miners, or workmen—the agent feels himself driven to fix a lower price for the ground in most cases than he is conscientiously warranted in doing, for fear that a favourable change should take place, and the men get too much money, and he get too much blame from the adventurers, or directors. The whole is a system of warfare, deception, and trickery—the men resorting to every stratagem and artifice to delude the captains, and the captains straining every nerve to compel men to do much work for little pay. I contend that, if this jobbing system was abolished, and every miner had fixed monthly wages according to his merit or ability, and the captains performed their duty by vigilant attendance, and regular inspection underground, a great evil would be removed, and a great benefit secured to all parties. The temptation thrown in men's way of "kitting," or combining to defraud the adventurers, by stealing the ore broken from a low price pitch, and carrying it to the pile of a higher price pitch, would no longer exist; and this fraud has been, and still is, carried on to a great extent. Also, in tutwork, how often has it been that men have contrived to cheat the captain by a dexterous manoeuvre in holding the measuring line, and sometimes, by cutting out the last month's mark, and fixing it farther back in the level? and, probably, there are but few levels of any extent, that their real measurement would come up to the length paid for in the cost-book.

Your experience, Mr. Editor, will convince you how greatly this alteration would simplify the accounts or book-keeping of a mine: by this means the considerable expense and delay of assaying and re-assaying scores or hundreds of samples, every one or two months, would be effectually abolished. It would also effectually do away the waste of time occasioned by the "sham-fight" holiday of *twelve setting days in the year*; and in a mine where 1000 men are employed, this abominable practice consumes, in one year, the labour of 100 men for *four months*—and although men may be sent underground on the morning of a setting day, yet it is well known that there is little or no work done; and, indeed, the first working day after setting is spent more in preparation to get "in course," from the alteration and confusion occasioned by the setting, than in useful labour.

An objection may be raised against this new regulation, or wages system, on the point of "materials;" and some may say, that as the materials could not then be charged to the men, that the adventurers would be exposed to fraud by an unfair consumption. Practical men know well how to guard against this; and if officers do their duty well, they can ascertain to a trifle the quantity of powder, candles, safety fuse, &c., that has been actually expended in the work, and have the power of effectually preventing any purloining. Moreover, by this usage the men would not be suffered to carry an inch of candle out of a mine; but by the present wretched mode, the candles are no sooner delivered out to them than they are seen openly carrying them away by dozens, or hundreds, either to their houses or to "Dolly Lob's," or some other beer-shop; and probably one-third of the candles, and much of the powder now issued to the men, is used for private purposes; and whatever plausible arguments may be advanced to cover this barefaced proceeding, it is the adventurers who suffer from the countenanced robbery; and by the men transmuting the candles into money, they generally by excess get more harm than good by the injury.

How often have I had my own mind pained, and my heart broken, by seeing a fine feeling in my brother agents, when, at a pay day, a pair of fine athletic fellows of four, six, or eight men, have not had to take up enough to pay so many children; and sometimes worse than this, when their "ball-bill" has had the red letter attached to it, showing that they are actually in debt to the mine, and their earnings have not been enough to meet the cost of materials charged against them! and they have only to go home and meet their starving families and clamorous creditors. How often has the work in mines been suspended by the men, from sheer necessity, running their bargains, and the poor fellows prosecuted and imprisoned by the agents, or adventurers, with relentless cruelty, because they could not work without the necessities of life. Now, all those heart-rending things would be mainly done away, if men had "fixed wages." The monthly cost of a mine could always be contemplated to a trifle, and directors and venturers would not then be startled, as they often are now, by the cost being hundreds beyond expectation. The inhabitants and dealers in every mining district would also be delivered from great vexations, and serious losses, by such a change. It is well said respecting mining, "time is money"—and one of the highest economical points is, *to do the most work in the shortest time*; and surely this great object is not attained by the present method. The only good (if good it may be called) arising from the

"setting" practice, is that it gives leisure, *alias* laziness, to the agents, and makes the situation of an underground captain almost a sinecure. The work being set to the men, they become just about their own masters, and require but little looking after; and if the captain, once a day or night, sees that they are at their post, his work is done, I am persuaded that, by the plan I have recommended, there would be as much work done in nine months, as there is now done in a year, throughout the county. See, sir, how *unfair* the present usage is: here is a pair of four men, two of them robust, skilful, industrious miners, and the other two quite the reverse, and yet they must all share alike in the earnings, although the two lusty ones have done three times as much work as the others.

In conclusion, I say, give my countrymen fair wages, and they will do work "worth the money," and we shall not find among them 1 skulker in 20; and should there be here and there a lazy one, he would soon be scouted, or exposed by his better principled comrades, if they were working under a liberal system; but by the present mode, even the most conscientious workmen feel themselves justified in catching at every advantage to delude that comes in the way: in fact, as I said, it is a warfare—a system of over-reaching and oppression. Only witness the common scene of a pair of men taking a new pitch in a survey at a *farthing a fathom*, which ought to be 8*l.* or 10*l.*!! and they are allowed to work at this rate by the proprietors. (Shame! shame! to the system.) Why, can they believe that those men will work as if they had a fair price? Oh! this universal folly of curbing and curtailing the underground operations, and occupying a fortnight to do a week's work, while the ponderous cost of steam-engines, agencies, directorships, &c., is marching on with the same speed, as if four times the work was doing underground.—JOHN BUDGE: *Callington, June 13.*

ATMOSPHERIC RAILWAYS—THE BAROMETRICAL SYSTEM.

SIR,—The starting point of any question of locomotion, is the original resistance of the load to be moved; the comparison between this resistance, reduced by railways to 8*lbs.* per ton on a level, with the power necessary to overcome it, will give the value of the system by which this power is applied. Among the various systems, by which locomotion is produced, there is none for which calculation has, or could have, established any connection between the resistance and the power; locomotive-engines, ropes, &c., are mere mechanical contrivances, in which the nature itself of the force, the way in which it is applied, necessitates an immense loss; the same train, that a few horses could draw, must be carried by a locomotive 10 times more powerful, for the sole reason that higher speed is wanted, than possible by animal traction. Thus, the immense saving of friction effected by railways is wasted by the expensive power of locomotive-engines, and, if speed is obtained, we are still very far from the possible economy. The object of the tables I had the honour of submitting to you, is to determine the means of attaining this economy, by establishing a direct connection between the existing resistance and the power wanted, so as to employ always only the power absolutely necessary, and to increase this power for producing speed, only in the same proportion as resistance increases in consequence of this speed. This result we obtain by the entire and natural interpretation of the principles of atmospheric system, and by apparatus based on its special exigencies.

The atmospheric system cannot be judged by the results of existing lines—only a part of the question has been there considered; this part (the construction of the propelling tube), can only prove the absolute material possibility of the system: the possibility to be proved, the only to be admitted in railway questions, is the economical, the commercial possibility. To establish it, the whole of the question has been seriously studied; and the tables, which are the result both of theoretical investigations and long and careful practical experiments, made by Monsieur H. Emmanuel and myself, will prove, that the power, necessary to draw a train, by the proper use of the atmospheric system, differs from the resistance of that train only by a small amount of friction—that the power can be transmitted without loss from the stationary engine to the other end of the line—that a given exhaustion can draw a corresponding weight—that high and regular speed can be obtained with certainty. The power by which atmospheric propulsion is produced may be created by the continual working of a small stationary engine—it may be husbanded, used when required, in quantities exactly varying with the effect produced; and such is the peculiar qualification of atmospheric pressure, as agent of propulsion, that, calculating the power necessary to draw a train by it, we find it composed of two different and very distinct parts—the first, that expended previous to the starting of the train, is reduced to a small amount of friction by the use made of the rarefied air; the second, that expended after the train has started, is exactly the amount necessary to overcome its resistance: atmospheric system allows thus economy in the production of power, and no loss in its transmission. For effecting in a regular manner the transmission of power, several practical considerations are to be taken into account, not only for the construction of the tube and valve, but also for that of the whole apparatus, of which every part is closely connected. Dilatation of the rarefied air, by leakage, caloric, &c., can be entirely prevented by a concurrence of means in the tube, valve, piston, and exhausting apparatus. The possibility of closing hermetically a tube with a continuous opening, has been clearly demonstrated by the temporary success of a valve, in which grease is the closing agent; this proves the entire practicability of a valve, if general and non-mechanical means of closing it are adopted. Grease alone cannot be more suitable for closing such a valve, than for closing any other joint or valve of any engine.

Grease is a valuable auxiliary when employed to fill up the small interstices of bodies destined to exact fitting: in this case it prevents any escape of the gas in contact with it, by its capillary adhesion, but the influence of temperature on it prevents its being a safe material for closing larger spaces.

To obtain from a power the greatest possible effect, the point where this power is the greatest must be brought in direct connection with that in which the resistance to be overcome is the least: they must both act on the same line. In the disposition of the tube as regards the train, application must be made of this principle: friction is thereby avoided; and the whole power existing being employed, the weights carried are entirely corresponding to it. Direct transmission of power is also the only way of obtaining regular speed. Speed on a railway is the result of the continual action of a power superior to the resistance of the train. Low at first, when a part of this power is employed in destroying the *vis inertiae* of the whole mass, it increases regularly till it attains its highest point, which represents the equilibrium, between the acting power and the resistance, increased by the increase of speed. In case of any retarding of the moving agent, regularity of speed is continued by the train once in motion reacting on this agent: a train, after the momentum has been created, is a fly-wheel regulating the action of the power.

In atmospheric system, the piston, the receptacle of the whole power, the moving agent, is not capable of any momentum: the slightest obstacle may retard, stop it, if the train does not exercise on it its regulating reaction; and the effect of this reaction is partly lost, if it is not effected in a direct manner: the train in this case acts like a fly-wheel, receiving from the moving engine only a part of its power, and returning only a part of the fraction received—a given exhaustion can carry corresponding weights; and the same disposition by which this effect is produced insures regularity of the speed, the special character of atmospheric propulsion.

Let us now compare the atmospheric system—not such as imperfect and apparatus have made it, but such as its nature allows—such as a steam locomotive would make it, if only half the skill and genius employed for improving locomotive engines was devoted to it—let us compare it with the locomotive engine! Will ever the locomotive engine avoid the necessity of dragging its own weight?—will ever its power be anything else but a power of adhesion?—will it be possible ever to avoid the disadvantages arising from the production of a large quantity of steam in a short time in a limited space—of using engines only at certain times—of obtaining various speeds, with apparatus working economically only at a certain rate?—can ever the locomotive engine lose less than 80 or 85 per cent.? The atmospheric system is now a positive calculated theory, that nothing can change; it shows not only the most economical existing, but possible, mode of locomotion. What will be the difference between its practical results and those of locomotive engines, when such difference exists in their theoretical capabilities? But I am afraid I have intruded too long on your indulgence, and shall, if you allow, give in a following letter the description and explanation of the barometrical system—the complete practical expression of our theory.—N. A. BURNIER: *Dufour's-place, Broad-street, Golden-square.*

STEAM-BOATS.—In 1814 there was but one steam-boat belonging to the British empire. During 30 years the number has increased to about 1000 British steam-boats, which are now navigating to and from all parts of the world.

THE DAILY NEWS,

NEW LONDON MORNING NEWSPAPER.

PRICE TWO-PENCE HALFPENNY. PUBLISHED IN TIME FOR THE MORNING MAILS.

The proprietors of "THE DAILY NEWS" regret to learn, that the paper has not always reached the subscribers so early or so punctually as might reasonably have been anticipated. Their apology is, that the success of the great experiment so far exceeded all expectation, that it was not possible to produce the required numbers, even with the most powerful machinery, in time for the morning Expresses and Mails; and the number of Post-office Orders which poured in made it difficult, and some days impossible, to distribute them amongst the trade—so that delays in executing such orders were unavoidable. They trust, however, that their arrangements are now so complete, as to insure the subscribers against all chance of delay; yet, as all the respectable news agents have given to "THE DAILY NEWS" an active support, and many have announced, by advertisement, their willingness to supply the paper for 16s. 4d. per quarter—payment being made in advance—the proprietors recommend that new subscribers should order copies direct from a news agent, and only when there is an apparent difficulty transmit a Post-office Order, payable to

Whitefriars, June 11.

JOSEPH SMITH, "DAILY NEWS OFFICE," WHITEFRIARS, LONDON.

BIDDLE'S PATENT EOLIAN ENGINE.

This engine puts forward strong claims to public consideration, as it is calculated to bring within the reach of every one an impelling power, which Nature supplies bountifully in all situations. Whatever steam has done for us, there yet remains a field of vast extent, which it is found too costly, or too inconvenient to occupy; nor has any thing hitherto appeared to supply that want of cheap motive power which is still felt in many agricultural operations, and all the minor departments of mechanical enterprise. The following brief description will render the engravings intelligible:—Fig. 1 of the engravings represents an Eolian engine in its simplest form. The ground framing, A, supports a vertical shaft, B, which turns in an orifice through the centre of the platform, A, and in a step at bottom. At the top of this shaft is a frame-work, consisting of two cross-bars, supported at their outer ends by stays from an iron upright, M, on the centre. On one of these bars, and running parallel with it, is a pair of sail-booms, T, united at the centre by a metal tube, and each carrying a sail. These sails are fixed on the booms to work at right angles to each other, so that when either one is vertical the other must be horizontal; and they are counterpoised by weights, G, in order that they may take any change of position with ease, and the booms are hung so that they will turn freely on their axis. On exposing the engine in this state to the action of the wind, one of the sails will be immediately elevated to a vertical position, and the opposite one at the same moment depressed to a horizontal one; when, as in the case of a common vane, the machine will swing round; in doing which, the impulse given, and the action of the counterpoise, are found sufficient to cause the sails to change positions, when the evolution is repeated, and rotary motion thereby communicated to the shaft. Though perfectly serviceable in this simple form, the same frame-work may carry any required number of sails, and constitute an engine of greater power, but with some degree of complexity. For example—fig. 2, shows the same machine hung with eight sails—four on the upper side and four on the under—and each pair is at right angles to the other on the same side; and, consequently, neither sail takes the wind from the other—the power is by this arrangement quadrupled.

Though it would occupy some space to describe, we are able, from personal inspection, to vouch for the facility with which the sails are detached from each other—worked in that state—and all or any of them secured in a horizontal position, and again set in motion, at the will of the attendant below, to whatever elevation the engine may be carried. By the employment of sails of different sizes, it is also evident that the machine may be adapted to work effectively in all weathers.

The principal advantages of this invention are these:—First, the extremely simple and inexpensive form in which considerable power may be gained by it, as an engine of a single pair of sails will be certain in its action, and of a power proportioned to the breeze and the surface of sail exposed to it. Secondly, the universality of its application, as every man may avail himself of, and turn to motive power, the wind which passes over his own premises. Thirdly, its perfect safety, even in the most complex form which can be given to it; as, exclusive of the ease with which it may be controlled, regulated, or rendered powerless at any moment, it holds no wind when working, but what is transmitted in power to the machinery, excepting only that which the bare spars meet on the returning side; and, if needful, it may be supported quite independently of the building in which the machinery works. To these may be added, the absence of all liability to get out of order—the impossibility of its being taken aback, or turned by the wind in a wrong direction—and the facility with which any part may be displaced and repaired without interfering with the efficacy of the remaining portion.

With regard to the extent to which the power of the engine may be carried, it appears to be a mere question of convenience and fitness of materials. The same causes will produce the same effects on any scale of magnitude; nor does there seem any reason to doubt but that, if the main-yard of the largest man-of-war in the navy were slung across a shaft, a pair of

sails on this principle, of a proportionate size and strength, would set it revolving with the same certainty, the same progressive increase of power, and the same facility of control, as is found to rule in engines of smaller dimensions. Practically, however, it can scarcely be necessary, or desirable, to go to such an extent. Experience generally determines in all machines what is a "handy," and what an "unhandy," size; and, after a certain diameter, it will probably be found cheaper and better to increase the power by an additional engine on the same shaft; or, as it occupies literally no room below, to erect another shaft and engine altogether. The irregularity of the wind as a motive power, may seem, in some cases, a formidable objection to this engine; but nine days in every ten, throughout the year, it may be expected to work effectively, and the periods at which steam-engines, or even water-wheels, lie idle, are not always at the discretion of their owners. At all events, there are a great variety of purposes to which it may be advantageously applied, where the occasional suspension of its labours for a few hours would be of no importance. As an auxiliary, moreover, to steam and water-engines on a larger scale, it may be most usefully adopted. We entertain, on the whole, sanguine anticipations of the success of this engine, and little doubt that we shall soon see it in very general use.—*Mechanics' Magazine.*

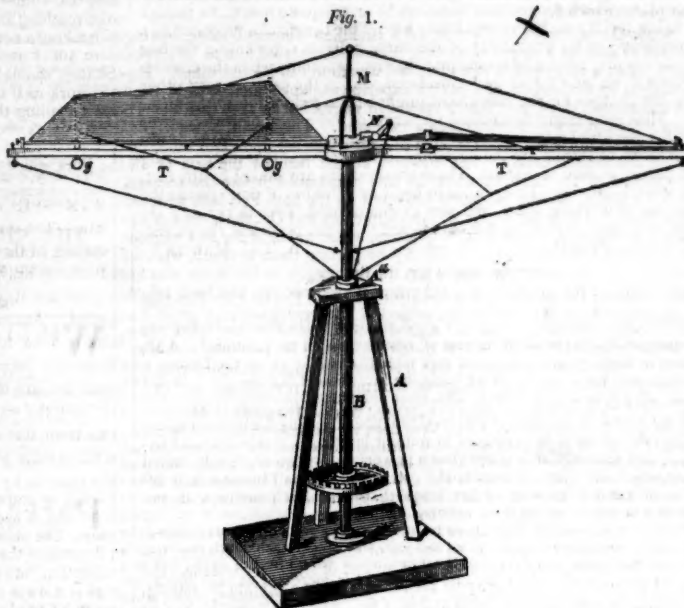
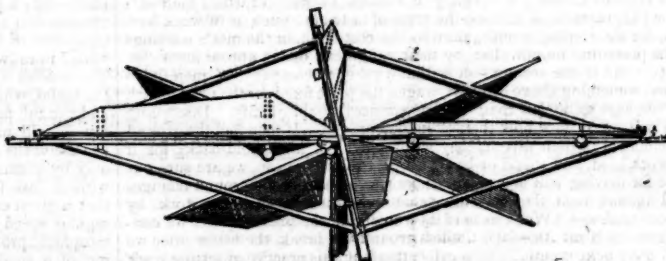
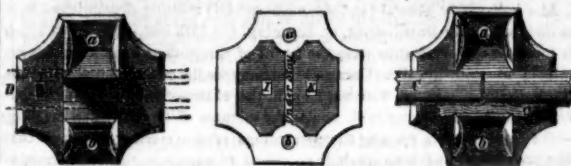


Fig. 2.



production of a practical mechanic. We fear, however, that the use of a central driving wheel may be productive of a pitching and of an oscillating motion at high speeds; but the fault, if it exists, is one which attaches equally to Stephenson's six-wheel locomotive, and to all the six-wheel engines at present constructed; and inasmuch as the use of wood for the central rail will enable the wheel to take a better grip, the same amount of pressure on the central wheel will not be necessary. Of the advantage of the boiler with upright tubes, we are quite clear. The plan permits a large area of fire-grate, whereby a moderate draft suffices; and by making the tubes small, as they may be made when their collective area is doubled, the boiler, with upright tubes, need not be materially, if at all, higher than the steam dome of the existing locomotive. We have long been of opinion that a boiler of this kind must come into use.—*Patent Journal.*

REED'S RAILWAY CHAIRS FOR SLEEPERS.—The great object in these improved chairs is to give the whole length of rails a more continuous, firm, and equal bearing, and to which we adverted in the Journal of May 9. The annexed drawings are top and bottom views of the sleeper chairs, 10 in. each way—weight, 24 lbs. The right hand drawing is a chair, showing



ing the rails C, fixed by the wedge c. On each side of the chair (centre drawing), are square or oblong holes, to receive a pin or bolt, placed on the underpart of the rail, near the end, to prevent the rails, when secured in the chair, from drawing asunder at their points of junction; or this bolt may be cast on the upper surface of the chair, and a corresponding notch cut on the underpart of the rail to receive the bolt; these bolts may be used or not, as required. The holes, a, b, are for screws or bolts, to secure the chair to the sleeper; this sleeper chair affords 10 in. bearing to the rail—being 6 in. more than the chairs now in use. The bearing may be extended to 12 in., or more, according to the breadth of the sleeper. There are other metal chairs of larger size, intended to lay on the embankments, instead of stone blocks, and which give to the rail a uniform bearing over the surface of 22 in. For curves in the railway, a metal sleeper is projected, with chairs cast at either end, having a bearing of 30 in. for the rail. These connected chairs, laid transversely on the railway, or roadway, will preserve the gauge from variation, and prevent the rails from being displaced by the outer pressure of the train, especially at curves on the line. The width between the chairs will be regulated by the gauge; and, if these connected chairs are not exclusively used on the line, may be laid at intervals at the joinings of the rails. By the adoption of iron, instead of wood and stone, a superior degree of solidity and permanency is given to the railway, and the rails, having an extended support, are less liable to bend and work loose within the chairs at their points of junction, which is often the occasion of accidents than is generally admitted. Mr. Reed has patented other chairs to be used on embankments, forming a complete metallic base for the rails to rest on; and they may all, if not entirely, at least partially, be used with much advantage. They are cast hollow beneath in such a manner as to keep them of moderate weight—while their strength is not diminished. The chairs may be made of any weight or form to suit the rail, so long as the principle of the extended bearing is preserved. Of the increased safety in working, there can be, we think, no doubt; and the working expenses must be greatly diminished by the absence of required labour employed, under the present system, in the maintenance of way, and the extra cost of first laying down will be made up by their durability. The models may be seen at Mr. A. Prince's, patent agent, 14, Lincoln's Inn-fields.

SELF-ACTING BALL.—We have been informed, that Mr. F. Stone, watch-maker, of Cardiff, has invented a self-acting ball, that will run on a level, and keep in motion for an indefinite number (say 1000) years, and that the inventor feels confident he could construct one of a ton weight, on the same principle, to run any distance.—*Bristol Mercury.*

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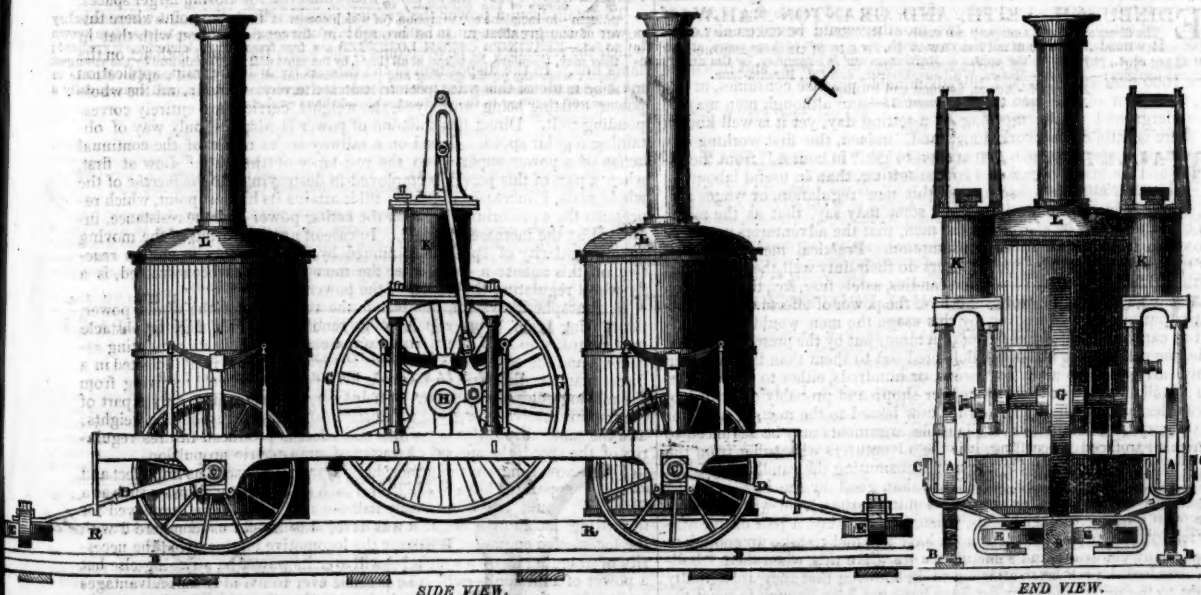
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IMPROVEMENTS IN THE LOCOMOTIVE ENGINE---PETTIT'S PATENT.



SIDE VIEW.

END VIEW.

Mr. Pettit has contrived a new species of locomotive engine, by which he proposes to overcome the objections which attach to the ordinary methods of railway locomotion; first, by allowing every wheel in the train to revolve on a separate axle, and in its proper position; and, secondly, by providing a wooden rail for the driving wheel, which will afford sufficient adhesion to enable the engine to ascend an incline, whilst iron rails are used for the carrying wheels, in order to reduce the friction of the load to the lowest possible amount; thus adapting the rails to the distinct purposes to which they are required. To carry out this system, the arrangement shown in the accompanying views is proposed; but the peculiar position of the boilers and cylinders of the engine is not necessary to the invention. In the drawings, the same letters refer to both the side and end view; in the latter, one boiler is supposed to be removed. AAAAA are the four carrying wheels, running on the iron rails BB, and fixed on their respective axles CCCC. The bearings of those carrying axes are fitted so as to allow them to swerve enough to keep the wheels true with the rails in passing

round a curve; and they are guided in the right direction by the levers DDDD, to the ends of which are fixed the guide wheels EEEE, running on each side of the centre rail R. These guide wheels act exactly in the same manner as the shafts of a common four-wheeled carriage, and will lead the engine in the direction of the centre rail, which thus acts as a switch and renders it impossible for the engine to run off the rails. On this account flanges to the wheels would not be necessary, although they might be adopted as an additional security in case of the guide levers or wheels breaking. G is the centre driving wheel, taking on to the central wooden rail R, and fixed on the crank axle H, which may be driven as shown in the drawing, or by any other convenient arrangement of the steam cylinders KK, &c. The plan shown has the advantage of a straight axle which is cheaper and safer than one with double cranks forged on. LL are two cylindrical boilers with vertical tubes, through which the heated air passes to the chimney. There appears to us to be much judicious arrangement in this system of railway locomotion, and it is evidently the

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

TUESDAY Cockermouth and Workington Railway—office, at Eileen.
Newport, Aberystwyth, and Hereford Railway—office, Hereford, Twelve.
Northamptonshire Railway—office, at Eileen.
Isle of Man Railway—Hall of Commerce, at One.

MONDAY West Wharf Railway—office, at Eileen.
Wheal Elizabeth Mining Company—Tavistock, at Six.
Bank of Australasia—office, at One.
Midland and Eastern Counties Railway—London Tavern, at One.

TUESDAY St. Austell Consols Mining Company—New Inn, Tywardreath, at Five.
Ayr, Glasgow, and Perthshire Railway—Messrs. Phillips and Son's, 28, Laurence Pountney-lane, at One.

WEDNESDAY Law Life Assurance—office, at half-past Eleven.

THURSDAY Marine Insurance Company—office, at One.
Pembroke and Carmarthen Railway—London Tavern, at One.
Coventry, Nuneaton, Birmingham, and Leicester Railway—King's Arms Hotel, Palace-yard, Westminster, at Eleven.

FRIDAY Real del Monte Mining Company—office, at Two.
Bolton Mining Company—office, at One.
St. Lawrence and Atlantic Railway—George and Vulture Tavern, Eileen.

[The meetings of Mining Companies are inserted among the Mining Intelligence.]

HAYLE RAILWAY COMPANY.

At a half-yearly general (and also made special) meeting of proprietors, held at their office, Old Broad-street, on Saturday, the 13th inst.—the object being to receive a communication from the board of directors as to an arrangement entered into with the West Cornwall Railway Company for the contemplated sale of the Hayle Railway, —Louis VIGORS, Esq., in the chair,—the advertisement convening the meeting being read, as also the minutes of the preceding meeting, —the CHAIRMAN, in opening the proceedings of the meeting, observed that the proprietors had been specially convened to submit to them the arrangement entered into by the directors with the West Cornwall Railway Company, who, consequent on their obtaining their bill, had agreed to purchase the interest of the Hayle Railway Company at the sum of 80,000*l.*, being the actual amount expended,—and, moreover, to pay and meet any engagements which might have been entered into (and then existing) by the company,—it being provided that the West Cornwall Railway Company should have the right, within three months after the passing of the bill, to determine whether they would purchase and take to the line, or not, such being optional on their part; and moreover, that the directors should have the power of determining whether the amount named should be paid in cash, or by paid-up shares, in the company representing the purchase money, at any time within six months,—and that, in case it should be so determined that the amount should be in money, and not in shares, then that such be divided into four annual payments, of 20,000*l.* each. The directors had, after much consideration, and duly weighing the position in which the company was placed, as also the advantages that might prospectively accrue to those who might embark in the lengthened line, —and furthermore, considering that, with the limited returns, no immediate benefit could be contemplated, arrived at the determination, that the best course was to merge the line into the proposed railway, and that the terms were equitable. He (the Chairman) begged further to observe, that the bill of the West Cornwall Railway, which had passed the Standing Orders, and having been read a second time, would, in a few days, be submitted to the committee on its merits,—and although some slight opposition might be contemplated, yet but little doubt need be entertained of the success of the measure. The population on the line of the West Cornwall Railway was stated by the Chairman at 150,000.

REPORT.

The directors, at this adjourned half-yearly meeting of the proprietors, have, in the first place, to lay before them the usual annual accounts, duly audited; and, in the next, to propose to them, for re-election, two of their body.—Mr. Abel Lewis Gower and Mr. Frederick Ricketts—who go out of office pursuant to the company's Act, but are eligible for re-election. This meeting has also been specially summoned, to be put in possession of a correspondence that has taken place between the committee of management of the West Cornwall Railway Company and the directors of this company, on the subject of the proposed provisional sale to the West Cornwall Company of the Hayle Railway, which will be read to the meeting. The company's solicitors have prepared an agreement, to be submitted to this meeting, for the purpose of effecting the object, and the agreement will be submitted to the proprietors for their sanction, and a resolution will be proposed to them, authorizing the directors to affix the company's common seal to the agreement in question. The directors will confine themselves, on the present occasion, to stating, that the West Cornwall Railway Bill is waiting its turn before the Commons committee, now engaged with the Cornwall Railway Bill; and the directors hope, that, in a week or two, both bills will have passed the committee on merits.

A general conversation then ensued; but as the main features are embodied in the observations of the Chairman, we deem it unnecessary to enter into it.—A vote of thanks having been voted to the chairman and directors, for the attention they had devoted to the interests of the company, the meeting then separated.

WEST CORNWALL RAILWAY.—Mr. Austin, in his opening speech before the committee on this bill, said that the proposed line would commence at Truro, and, passing through Redruth, Hayle, and Marazion, terminate at Penzance. There were to be two branches, the one from Redruth to Penryn, the other from Hayle to St. Ives. There was already a railway from Hayle to Redruth, called the Hayle Railway, which it was intended to improve and convert from a single to a double line. The present bill was thrown out last year, both because it was thought that its curves and gradients might be rendered more favourable, and also on the ground, that it contained no powers to enable the company to improve the Hayle Railway. Without any reference to a Coast line, there was a local necessity for having this line constructed, a fact conclusively proved by the existence of the Hayle Railway. One important consideration was, that this line would connect together the ports of Penzance, St. Ives, Hayle, and Falmouth. The average annual value of the ores taken from all the mines in Cornwall was 200,000*l.*, and three-fourths of this produce came from mines west of Truro. The cost of this line was estimated at 500,000*l.* The ruling gradient was 1 in 60 on the main line; on the Penryn branch there was one gradient of 1 in 50. Substantially this bill, it would be found, was unopposed. There was not, in this case, any question between a Central and a Coast line. This was entirely a local railway, and only incidentally connected with either Falmouth or Plymouth.—Mr. Pierce, stated that he was Lloyd's agent at Penzance, and also consal for several foreign powers. There were annually imported to Penzance 40,000 tons of coal. Last year, owing to easterly winds, 760 vessels of an aggregate of 479,480 tons put into Penzance. During the last week in May 40,000 mackerel were caught off the town. Land in the neighbourhood of the town was worth from 5*l.* to 14*l.* an acre; it was mostly cultivated to produce early vegetables. The mines in the district produced 30,000*l.* worth of copper, and as much of tin annually. This line would be the best paying line in the west of England, as the traffic tables amply proved. The feeling of the corporation of Penzance, and of the town itself, was in favour of this project.

COMMENCEMENT OF THE OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.—At length, at the expiration of nearly twelve months after the passing of the bill authorizing the construction of the Oxford, Worcester, and Wolverhampton, and after repeated false alarms, the cuttings on the line have been begun in earnest. The works may be said to have had a *bona fide* commencement near to Worcester, and at Droitwich, on Wednesday and Thursday last. The chief operations hitherto in the vicinity of this city have been at and near the site of the intended Worcester station, which is at an elevated spot, about half a mile from the city eastwards. The country on the eastern side of the city is of a generally elevated and undulating character, and at a short distance from the intended station there will be a tunnel about 260 or 270 yards in length. It is at the entrance to this tunnel that the navigators are at work; there is a shaft sunk at about the centre of the tunnel, which is of corresponding depth, and awful to look into. It is intended, in order to give the people of Worcester immediate and direct railway accommodation, to construct that portion of the line from Abbott's Wood on the Bristol and Birmingham Railway—some five miles northward of Worcester—to Worcester, and northward to join the Bristol and Birmingham Line at Stoke Prior on the north, a branch line being made from the latter place to Droitwich. This portion of the works will, in accordance with the recommendation of the Lords of the Privy Council for Trade, be constructed on the double or compound gauge, being made serviceable for either broad or narrow gauge trains. The Oxford, Worcester, and Wolverhampton Railway Company have been much abused, and many contradictory explanations have been offered by parties not enlightened on the subject, on account of the delay which has been suffered in the commencement of the works; but they have certainly consulted the interests of their shareholders, in not commencing the cuttings until it had been ascertained beyond doubt what would be the ultimate decision of Parliament on the question of gauge.

WATERFORD, WEXFORD, AND VALENTIA RAILWAY.—We have been requested to publish the following explanation from the secretary, in reference to the withdrawal of this bill during the present session of Parliament:—"The directors were bound under the provisions of the deed to call a meeting within 12 months from the date of the subscription-deed, or earlier if the report of the Admiralty surveyor respecting the harbour of Valentia should be made, a copy of which was only obtained from the Admiralty on the 1st of June, last Monday week. The subscription-deed was dated the 5th of June, 1845. The directors feeling they were bound both morally and legally in good faith with the subscribers, called such meeting within the legally appointed time, submitted the report of Mr. Walker, the Admiralty engineer, and took the sense of the meeting, as to the desirableness of proceeding or withdrawing the bill during the present session, and have acted according to the wishes of the subscribers. Considering the great national importance of the undertaking, it was thought desirable to await the adoption of the report by the Admiralty. The directors have not abandoned the scheme, but have merely postponed the application of the bill until the next session."

NEW METHOD OF COMBINING STEEL WITH IRON.—Mr. C. Sanderson, of Sheffield, has just obtained a patent for improvements for combining steel and iron into bars for tires of wheels, and other purposes, by which a considerable saving is effected, and the steel still secured in its proper place on the implement manufactured, to withstand the wear and tear. First, it is proposed to take iron which has been manufactured into a bloom in the usual way, and of any required form,—and pass the same through rollers, suitably formed for making a cavity in the iron, which is afterwards to be filled up with liquid steel in the following manner:—The bloom, when in a hot state, is to be passed between rollers, or hammers, so as to form a hollow or indentation sufficiently large to contain the liquid steel intended to be incorporated with the iron: a thin plate is to be placed over the hollow in the iron, and welded to it at the sides,—thus forming a tube into which the melted steel is poured;—the bloom is then worked up into the form required, by the usual process of rolling or compressing; when the steel will be found to be united with the iron in the place required.

Senor Geronimo Paez, director of a Brazilian diamond mine, having reason to suspect a negro of stealing diamonds, ordered him to be ripped open, when a magnificent rose diamond was found in his intestines. Encouraged by the success of this first experiment, he ordered it to be tried on the second, third, and fourth suspected negro, but in each case the victims were innocent—no diamonds were found. This result, however, did not check Senor Paez, who repeated this atrocious act upon two more negroes, but unsuccessfully. His conduct at last reached the ears of the proprietors of the mine, by whom he was summoned before the tribunal of Villa Bella. By the judgment delivered on the 25th Feb. last, we learn that Paez was ordered to pay Senores Cifuentes and Co., the lessees of the mines of Brassala, a sum of 2500 piasters, as the value of the five negroes of whom he had deprived the company by putting them to death, without any utility. No order was made for the first negro, as his death was for the benefit of the owners! For the crime, no proceedings had been taken.

BUFFING APPARATUS.—On the subject of buffing apparatus, a great deal of diversity of opinion exists, and a good deal of discussion has taken place, principally as to the merits of that which is in use on the Liverpool and Manchester Railway, and a different sort which is employed on the Dublin and Kingstown Railway, the latter being the invention of Mr. Bergin. As drawings are given of both these buffers, their difference will easily be seen; but as yet opinion seems still to incline to that used by the Liverpool and Manchester Railway. Their respective merits have been very strictly scrutinized by numbers of scientific gentlemen connected with railways; but the question has not been satisfactorily set at rest. It will be seen that there is a totally different action induced upon the train in the two cases. In the Liverpool and Manchester Railway, there is, in fact, a spring between each carriage, in consequence of which, on the train running against any obstacle, or if an engine should run against the train, the first coach would receive a heavy blow, the second a less heavy one, the third still less, and so on, each coach receiving a shock with less velocity; but the momentum would be the same, minus a small quantity of friction, because the weight is increased at each shock, although the velocity is diminished. In the Dublin and Kingstown, on the other hand, the springs are connected together from one end of the train to the other; hence, on this plan, each coach is struck by the same blow, and experience alone must decide upon their relative merits and demerits. The Dublin ones have this advantage—that the buffers are always the same height, whatever may be the load in the carriage, which is not the case in the other.—*Leconet.*

A public meeting, at which J. E. Drinkwater Bethune, Esq., presided, was held at the Western Literary Institution, Leicester-square, on Wednesday last, to explain the plan on which the Hand-in-Hand Building Association is founded. The CHAIRMAN opened the proceedings, by alluding, in general terms, to the many fallacious schemes that had been put forward, professing similar objects. He informed the meeting, that before he had become a trustee, he had closely examined the plan of the association, and the calculations on which it is based, and had no hesitation in declaring the society would fulfil the promises it made to those who joined it.—Mr. KRUSK (of Old Swan Wharf, Chelsea), in a forcible speech, impressed on the meeting their duty to provide a comfortable home for their families, and stated that the greater part of a tradesman's life was spent in working for rent and taxes, which labour, through the aid of this society, might be turned to his own benefit.—Several other speakers moved various resolutions; and, in the course of their observations, explained the details of the Hand-in-Hand Association, which appeared to give great satisfaction.

VALUE OF LAND.—The great Willenhall estate, in Warwickshire, with a rental of 1550*l.* a-year, was sold by Mr. Robins, at the auction mart, on Tuesday, for 48,100 guineas. Lord Craven is the purchaser. Mr. Jones Loyd and Mr. Mellor (one of the tenants), were the highest of the unsuccessful competitors. This sum, it will be seen, is 334 years' purchase, and upon a rack rental.

NOTICE OF REMOVAL.—The GENERAL MINING COMPANY FOR IRELAND hereby give Notice, that the BUSINESS of the COMPANY will, on and after MONDAY, the 22nd of June inst., be REMOVED from 43, Lower Sackville-street, to their offices, 2, BURGH QUAY, near CARLISLE-BRIDGE, Dublin, June 18, 1846.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE FOR MACHINERY AND AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind where constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

LONDON AND OXFORD (late London, Oxford, Cheltenham, Gloucester, and Hereford) RAILWAY.—The shareholders who have NOT yet CLAIMED THE FIRST INSTALLMENT OF FIVE SHILLINGS per share, are earnestly requested to send in their SCRIP without delay, in order that the second instalment may be announced and paid, and the affairs of the company finally closed.

By order, E. CLAYTON, Secretary.
13, Old Jewry Chambers, London, June 16, 1846.

EDINBURGH, LEITH, AND GRANTON RAILWAY.—The directors of this company are ready to RECEIVE TENDERS for LOANS, on Debenture Bonds, for sums of not less than £500, for a period of three years, at the rate of 4 per cent., payable at the terms of the prospectus, by the undersigned bankers.—London—Messrs. Williams, Deacon, and Co., Birchin-lane.
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